NRCS
Natural
Resources
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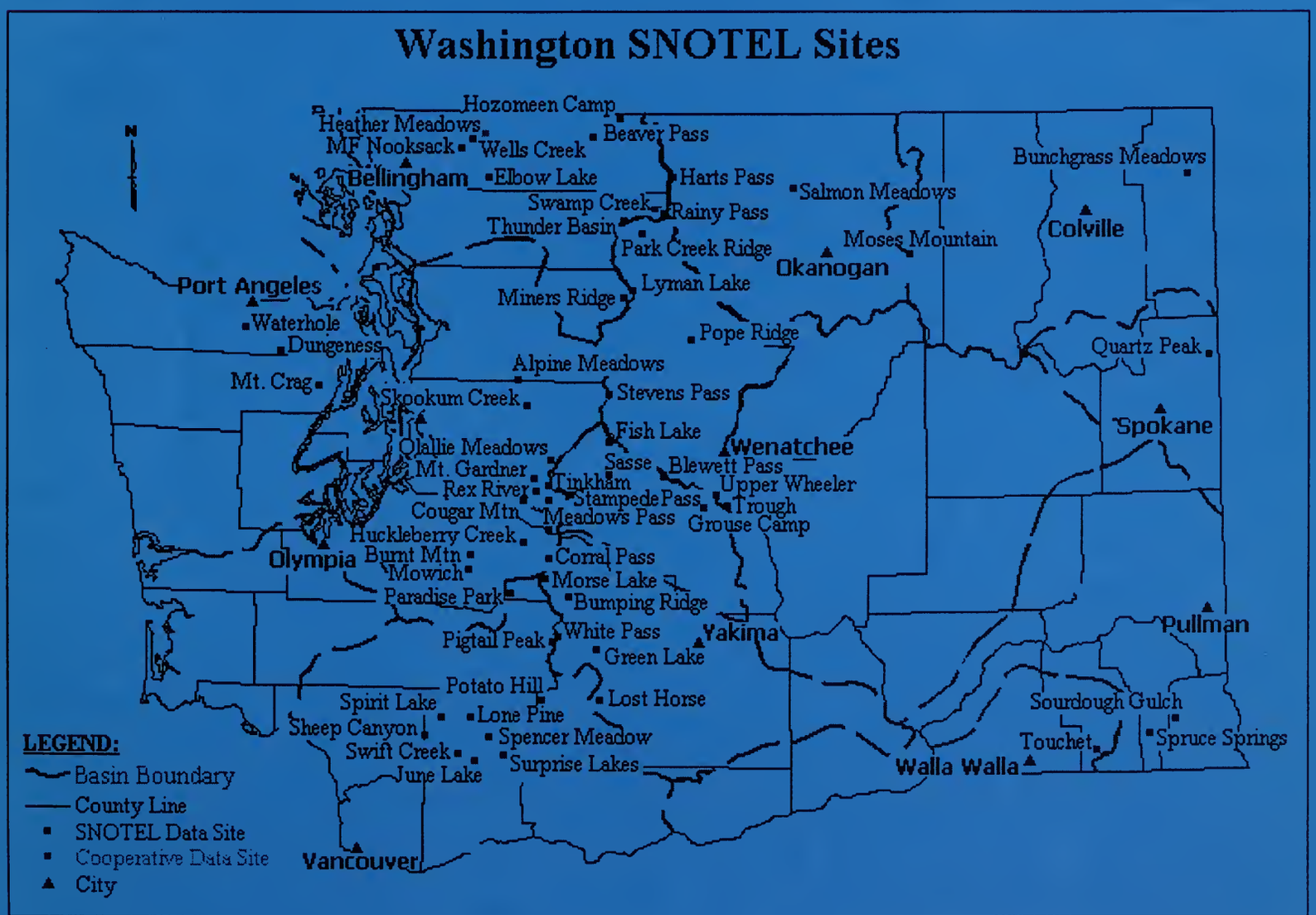
Service

United States Department of Agriculture

Washington
Water Supply Outlook Report
January 1, 2003



Water Supply Outlook Reports
and
Federal - State – Private Cooperative Snow Surveys

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How forecasts are made

Most of the annual streamflow in the western United States originates as snowfall that has accumulated in the mountains during the winter and early spring. As the snowpack accumulates, hydrologists estimate the runoff that will occur when it melts. Measurements of snow water equivalent at selected manual snow courses and automated SNOTEL sites, along with precipitation, antecedent streamflow, and indices of the El Niño / Southern Oscillation are used in computerized statistical and simulation models to prepare runoff forecasts. These forecasts are coordinated between hydrologists in the Natural Resources Conservation Service and the National Weather Service. Unless otherwise specified, all forecasts are for flows that would occur naturally without any upstream influences.

Forecasts of any kind, of course, are not perfect. Streamflow forecast uncertainty arises from three primary sources: (1) uncertain knowledge of future weather conditions, (2) uncertainty in the forecasting procedure, and (3) errors in the data. The forecast, therefore, must be interpreted not as a single value but rather as a range of values with specific probabilities of occurrence. The middle of the range is expressed by the 50% exceedance probability forecast, for which there is a 50% chance that the actual flow will be above, and a 50% chance that the actual flow will be below, this value. To describe the expected range around this 50% value, four other forecasts are provided, two smaller values (90% and 70% exceedance probability) and two larger values (30%, and 10% exceedance probability). For example, there is a 90% chance that the actual flow will be more than the 90% exceedance probability forecast. The others can be interpreted similarly.

The wider the spread among these values, the more uncertain the forecast. As the season progresses, forecasts become more accurate, primarily because a greater portion of the future weather conditions become known; this is reflected by a narrowing of the range around the 50% exceedance probability forecast. Users should take this uncertainty into consideration when making operational decisions by selecting forecasts corresponding to the level of risk they are willing to assume about the amount of water to be expected. If users anticipate receiving a lesser supply of water, or if they wish to increase their chances of having an adequate supply of water for their operations, they may want to base their decisions on the 90% or 70% exceedance probability forecasts, or something in between. On the other hand, if users are concerned about receiving too much water (for example, threat of flooding), they may want to base their decisions on the 30% or 10% exceedance probability forecasts, or something in between. Regardless of the forecast value users choose for operations, they should be prepared to deal with either more or less water. (Users should remember that even if the 90% exceedance probability forecast is used, there is still a 10% chance of receiving less than this amount.) By using the exceedance probability information, users can easily determine the chances of receiving more or less water.

Washington
Water Supply Outlook

January 2003

General Outlook

The State of Washington experienced one of the driest and warmest summer/fall periods on record. A good wet winter helped carry precipitation totals through the end of September at near normal levels, however July - September below average precipitation reduced what was much average conditions to only average. October and November were also very warm and dry. With December came the rains but also above average temperatures, delaying normal snowpack accumulation for at least a month. Considerable precipitation over the next several months will be required to mitigate current soil moisture, ground water and streamflow deficits.

Snowpack

The January 1 statewide SNOTEL readings were much below average at only 59%. The Tolt River Basin snow surveys reported the lowest readings at 39% of average. Readings in the Quilcene River Basin reported the highest at 127% of average. Westside averages from SNOTEL, and January 1 snow surveys, included the North Puget Sound river basins with 63% of average, the Central Puget river basins with 45%, and the Lewis-Cowlitz basins with 68% of average. Snowpack along the east slopes of the Cascade Mountains included the Yakima area with 64% and the Wenatchee area with 76%. Snowpack in the Spokane River Basin was at 55% and the Walla Walla River Basin had 57% of average. Maximum snow cover in Washington was at Lyman Lake SNOTEL in the Chelan River Basin, with water content of 21.4 inches. This site would normally have 29.7 inches of water content on January 1. Last year at this time Lyman Lake had 32.9 inches of snow water. The highest average in the state was Mount Crag SNOTEL on the Olympic Peninsula with 127% of average.

BASIN	PERCENT OF LAST YEAR	PERCENT OF AVERAGE
Spokane	47	55
Newman Lake	52	76
Pend Oreille	72	58
Okanogan	63	70
Methow	62	61
Similkameen	24	N/A
Wenatchee	57	60
Chelan	51	58
Upper Yakima	53	57
Lower Yakima	56	72
Ahtanum Creek	61	58
Walla Walla	46	57
Lower Snake	63	67
Cowlitz	50	56
Lewis	53	79
White	53	63
Green	49	54
Puyallup	53	63
Cedar	37	50
Snoqualmie	36	45
Skykomish	40	46
Skagit	46	54
Baker	43	57
Nooksack	40	78
Olympic Peninsula	86	127

Precipitation

During the month of December, the National Weather Service and Natural Resources Conservation Service climate stations reported varying precipitation totals throughout Washington river basins. The highest percent of average in the state was at Republic, Washington. Republic reported 264% of average for a total of 4.77 inches. The average for this site is 1.81 inches for December. The wettest spot in the state was reported at June Lake SNOTEL with a December accumulation of 27.4 inches, slightly below average for the site. Basin averages for the water year are all below average with the Olympics reporting the highest at 86% and the Upper Yakima with the lowest at 46% of average.

RIVER BASIN	DECEMBER PERCENT OF AVERAGE	WATER YEAR PERCENT OF AVERAGE
Spokane	89	63
Colville-Pend Oreille	137	85
Okanogan-Methow	156	85
Wenatchee-Chelan	97	62
Upper Yakima	70	46
Lower Yakima	116	68
Walla Walla	98	63
Lower Snake	105	69
Cowlitz-Lewis	103	68
White-Green-Puyallup	78	55
Central Puget Sound	66	50
North Puget Sound	86	60
Olympic Peninsula	126	86

Reservoir

Seasonal reservoir levels in Washington vary greatly due to specific watershed management practices required in preparation for irrigation season, fisheries management, power generation and flood control. Reservoir storage in the Yakima Basin was 285,900-acre feet, 72% of average for the Upper Reaches and 78,900-acre feet, 71% of average for Rimrock and Bumping Lakes. Storage at the Okanogan reservoirs was 38% of average for January 1. The power generation reservoirs included the following: Coeur d'Alene Lake, 79,500 acre feet, 72% of average and 33% of capacity; Chelan Lake, 351,100 acre feet, 88% of average and 52% of capacity; and the Skagit River reservoirs at 102% of average and 83% of capacity.

BASIN	PERCENT OF CAPACITY	CURRENT STORAGE AS PERCENT OF AVERAGE
Spokane	33	72
Colville-Pend Oreille	90	104
Okanogan-Methow	26	38
Wenatchee-Chelan	52	88
Upper Yakima	34	72
Lower Yakima	34	71
North Puget Sound	83	102

For more information contact your local Natural Resources Conservation Service office.

Streamflow

January forecasts vary from 100% of average for the Dungeness River near Sequim to 54% of average for Mill Creek at Walla Walla. April-September forecasts for some Western Washington streams include the Cedar River near Cedar Falls, 85%; Green River, 78%; and Skagit River, 89%. Some Eastern Washington streams include the Yakima River near Parker, 70%: Wenatchee River at Plain, 70%; and Spokane River near Post Falls, 68%. Volumetric forecasts are developed using current, historic and average snowpack, precipitation and streamflow data collected and coordinated by organizations cooperating with NRCS. Caution should be used when using early season forecasts for critical water resource management decisions.

Statewide December streamflows were below average, due mostly to extremely dry conditions most of the month. Some localized flooding was reported during the stormy period around the holidays, however average flows remained well below normal. The Priest River near the town of Priest River had the highest reported flows with 84% of average. The Yakima River at Cle Elum with 28% of average, was the lowest in the state. Other streamflows were the following percentage of average: the Cowlitz, 36%; the Spokane at Spokane, 44%; the Columbia below Rock Island Dam, 63%; and the Cle Elum near Roslyn, 30%.

BASIN	PERCENT OF AVERAGE MOST PROBABLE FORECAST (50 PERCENT CHANCE OF EXCEEDENCE)
Spokane	68
Colville-Pend Oreille	66-91
Okanogan-Methow	66-78
Wenatchee-Chelan	68-81
Upper Yakima	71-75
Lower Yakima	69-88
Walla Walla	54-68
Lower Snake	70-79
Cowlitz-Lewis	75-89
White-Green-Puyallup	78-82
Central Puget Sound	85-86
North Puget Sound	86-89
Olympic Peninsula	96-100

STREAM	PERCENT OF AVERAGE DECEMBER STREAMFLOWS
Pend Oreille Below Box Canyon	64
Kettle at Laurier	52
Columbia at Birchbank	71
Spokane at Long Lake	44
Similkameen at Nighthawk	48
Okanogan at Tonasket	60
Methow at Pateros	64
Chelan at Chelan	60
Wenatchee at Pashastin	35
Yakima at Cle Elum	28
Yakima at Parker	37
Naches at Naches	35
Grande Ronde at Troy	34
Snake below Lower Granite Dam	53
SF Walla Walla near Milton Freewater	30
Columbia River at The Dalles	58
Lewis at Ariel	61
Cowlitz below Mayfield Dam	36
Skagit at Concrete	51

For more information contact your local Natural Resources Conservation Service office.

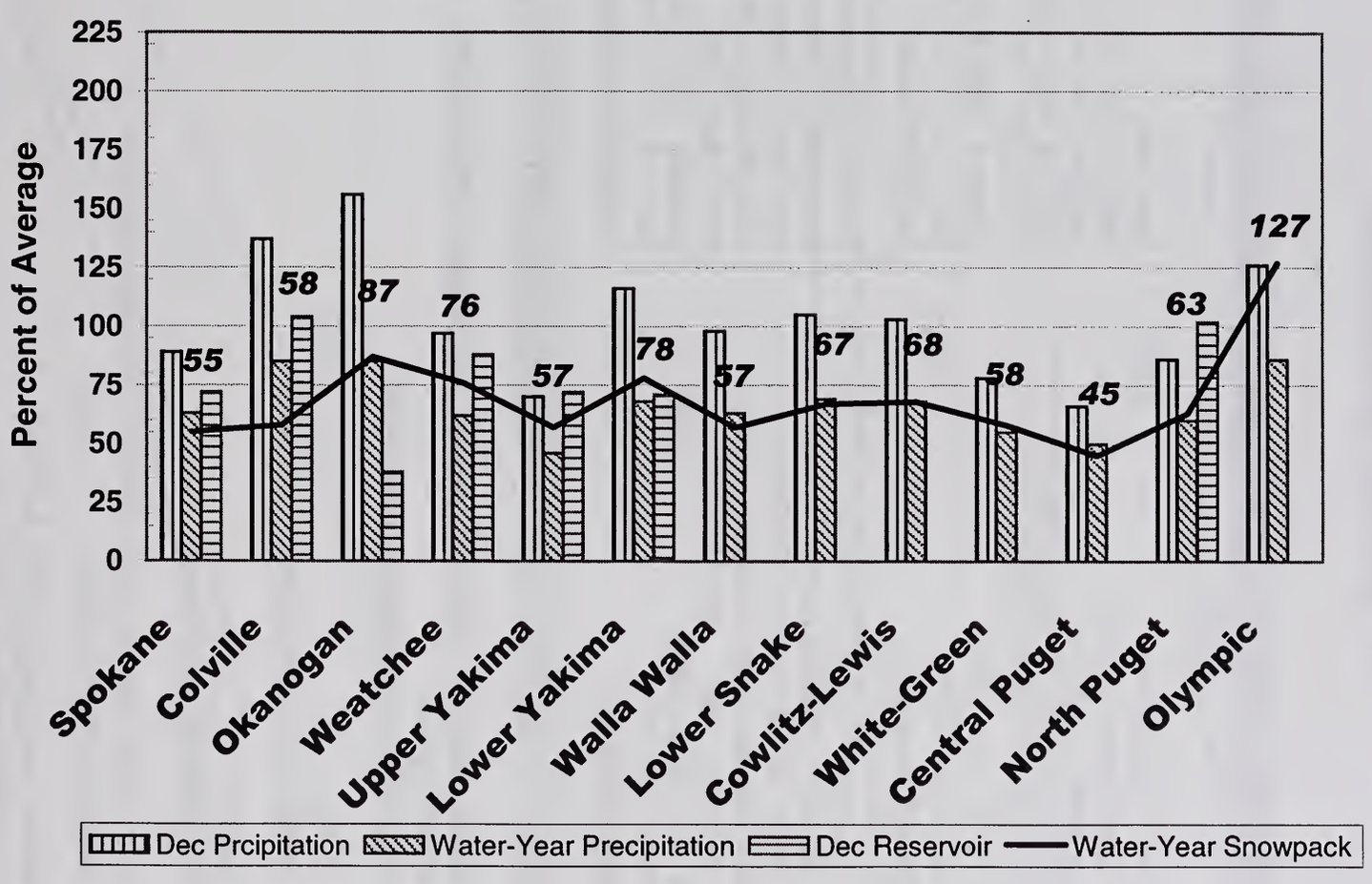
BASIN SUMMARY OF SNOW COURSE DATA

JANUARY 2003

SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 1971-00
AHTANUM R.S.	3100	1/01/03	---	3.5E	4.7	3.7
ALPINE MEADOWS SNTL	3500	1/01/03	---	7.6	28.9	20.1
ASHLEY DIVIDE	4820	12/28/02	7	1.0	2.6	3.4
BADGER PASS SNOTEL	6900	1/01/03	---	7.0	10.5	15.2
BARKER LAKES SNOTEL	8250	1/01/03	---	4.3	4.5	6.7
BASIN CREEK SNOTEL	7180	1/01/03	---	2.4	2.2	3.7
BEAVER CREEK TRAIL	2200	12/26/02	10	.9	7.2	--
BEAVER PASS	3680	12/26/02	33	5.4	15.0	--
BERNE-MILL CREEK (d)	3170	12/30/02	34	5.7	14.0	12.6
BLACK PINE SNOTEL	7100	1/01/03	---	3.3	2.3	5.2
BLEWETT PASS#2SNOTEL	4270	1/01/03	27	5.1	6.6	8.2
BRENDA MINE CAN.	4450	1/01/03	---	3.9	9.1	6.7
BROWN TOP AM	6000	12/26/02	68	17.2	36.8	--
BUMPING LAKE	3450	1/02/03	44	9.2	--	5.8
BUMPING RIDGE SNOTEL	4600	1/01/03	---	7.9	17.0	12.1
BUNCHGRASS MDWSNOTEL	5000	1/01/03	---	13.7	16.6	12.6
CAYUSE PASS	5300	1/01/03	---	15.5E	36.5	34.8
CHESSMAN RESERVOIR	6200	12/30/02	2	.4	.6	1.5
CHIWAUKUM G.S.	2500	12/30/02	21	3.2	4.6	5.2
COMBINATION SNOTEL	5600	1/01/03	---	2.3	1.4	2.2
COPPER BOTTOM SNOTEL	5200	1/01/03	---	2.9	3.7	5.3
CORRAL PASS SNOTEL	6000	1/01/03	---	11.8	19.4	15.8
COUGAR MTN. SNOTEL	3200	1/01/03	18	3.1	11.0	8.5
COYOTE HILL	4200	12/27/02	9	1.0	3.0	4.3
DALY CREEK SNOTEL	5780	1/01/03	---	3.7	3.1	4.9
DEVILS PARK	5900	12/28/02	50	10.2	23.8	--
DISCOVERY BASIN	7050	12/30/02	16	2.9	1.8	4.2
DIX HILL	6400	1/01/03	10	1.6	3.3	4.5
DOMMERIE FLATS	2200	1/03/03	22	4.2	4.7	3.9
EAST RAGGED SADDLE	3740	1/01/03	31	7.0	16.5	9.4
EASY PASS AM	5200	1/01/03	---	25.5E	47.0	31.9
ELBOW LAKE SNOTEL	3200	1/01/03	25	6.7	22.6	8.6
EMERY CREEK SNOTEL	4350	1/01/03	---	4.5	5.4	7.0
ENDERBY CAN.	5800	12/29/02	59	14.2	20.5	19.1
FARRON CAN.	4000	1/03/03	21	3.5	6.3	--
FISH CREEK	8000	12/30/02	12	2.0	2.2	4.4
FISH LAKE	3370	2/02/03	49	8.1	16.8	14.5
FISH LAKE SNOTEL	3370	1/01/03	32	6.8	15.6	15.0
FLATTOP MTN SNOTEL	6300	1/01/03	---	16.6	19.0	21.4
FOURTH OF JULY SUM	3200	1/02/03	15	3.0	8.0	3.7
FREEZEOUT CK. TRAIL	3500	12/27/02	14	1.6	3.1	--
FROHNER MDWS SNOTEL	6480	1/01/03	---	2.5	2.1	3.4
GRASS MOUNTAIN #2	2900	1/01/03	---	3.8E	5.0	4.6
GRAVE CRK SNOTEL	4300	1/01/03	---	5.9	5.2	7.7
GREEN LAKE SNOTEL	6000	1/01/03	39	8.9	13.7	10.7
GREYBACK RES CAN.	4700	1/06/03	16	4.6	6.4	4.3
GROUSE CAMP SNOTEL	5380	1/01/03	---	7.4	12.8	9.6
HAND CREEK SNOTEL	5030	1/01/03	---	3.4	3.6	5.9
HARTS PASS SNOTEL	6500	1/01/03	53	11.8	19.8	21.7
HELL ROARING DIVIDE	5770	12/30/02	36	7.7	13.9	13.4
HIGH RIDGE SNOTEL	4980	1/01/03	---	6.3	12.3	10.4
HOLBROOK	4530	1/01/03	---	2.0E	2.4	4.2
HOODOO BASIN SNOTEL	6050	1/01/03	---	12.0	20.0	19.3
HUMBOLDT GLCH SNOTEL	4250	1/01/03	---	1.3	6.2	6.0
ISINTOK LAKE CAN.	5100	12/30/02	5	.6	2.9	3.4
JUNE LAKE SNOTEL	3200	1/01/03	---	12.7	27.0	17.1
KELLOGG PEAK	5560	1/04/03	35	9.2	17.6	11.7
KLESILKWA CAN.	3450	1/06/03	9	2.5	4.2	4.6
KRAFT CREEK SNOTEL	4750	1/01/03	---	3.7	3.7	6.9
LESTER CREEK	3100	1/01/03	---	5.5E	9.5	8.5
LOLO PASS SNOTEL	5240	1/01/03	39	9.0	9.2	13.0
LONE PINE SNOTEL	3800	1/01/03	---	12.0	24.3	16.2
LOOKOUT SNOTEL	5140	1/01/03	30	6.6	15.0	13.7
LOST HORSE SNOTEL	5000	1/01/03	41	7.0	13.6	8.3
LOST LAKE SNOTEL	6110	1/01/03	---	12.8	26.4	27.1
LUBRECHT FOREST NO 3	5450	12/30/02	5	.6	2.0	2.7
LUBRECHT FOREST NO 4	4650	12/30/02	3	.5	1.3	1.4
LUBRECHT FOREST NO 6	4040	12/30/02	3	.5	1.6	1.6
LUBRECHT HYDROPLOT	4200	12/30/02	5	.3	2.0	2.5
LUBRECHT SNOTEL	4680	1/01/03	---	1.6	2.3	2.6
LYMAN LAKE SNOTEL	5900	1/01/03	---	21.4	32.9	29.7
MARIAS PASS	5250	1/02/03	16	3.4	5.3	7.3
MEADOWS CABIN	1900	12/28/02	4	.8E	2.3	--
MEADOWS PASS SNOTEL	3240	1/01/03	---	6.4	15.4	9.6
MERRITT	2140	12/30/02	20	3.7	7.7	7.0
MICA CREEK SNOTEL	4750	1/01/03	23	5.5	12.5	11.7
MISSEZULA MTN CAN.	5080	12/29/02	7	.8	3.4	--
MORRISSEY RIDGE CAN.	6100	1/01/03	---	6.9	12.6	28.4
MORSE LAKE SNOTEL	5400	1/01/03	---	19.0	29.8	23.4
MOSES MTN SNOTEL	4800	1/01/03	---	6.9	10.4	7.1
MOSQUITO RDG SNOTEL	5200	1/01/03	---	11.8	17.3	15.5
MOULTON RESERVOIR	6850	12/24/02	9	1.5	1.1	3.5
MOUNT CRAG SNOTEL	4050	1/01/03	57	14.4	17.5	--
MT. KOBAU CAN.	5500	12/29/02	24	6.0	7.3	5.4
MOUNT GARDNER SNOTEL	2860	1/01/03	---	3.3	11.5	7.4
N.F. ELK CR SNOTEL	6250	1/01/03	---	3.1	4.1	5.1
NEW HOZOMEEN LAKE	2800	12/26/02	13	1.0	2.8	--
NEZ PERCE CMP SNOTEL	5650	1/01/03	---	5.0	5.2	6.1
NOISY BASIN SNOTEL	6040	1/01/03	---	10.5	16.8	19.8
OLALLIE MDWS SNOTEL	3960	1/01/03	---	11.3	22.4	22.2
OPHIR PARK	7150	1/01/03	16	2.9	4.4	6.6
PARADISE PARK SNOTEL	5500	1/01/03	---	14.9	33.8	32.8
PARK CK RIDGE SNOTEL	4600	1/01/03	57	12.5	27.0	22.5
PETERSON MDW SNOTEL	7200	1/01/03	---	3.1	1.7	4.4
PIGTAIL PEAK SNOTEL	5900	1/01/03	61	16.8	25.6	23.1
PIKE CREEK SNOTEL	5930	1/01/03	---	6.0	7.5	12.0
PIPESTONE PASS	7200	12/29/02	5	.8	1.0	2.2
POPE RIDGE SNOTEL	3540	1/01/03	36	6.5	9.0	9.8
POTATO HILL SNOTEL	4500	1/01/03	---	7.2	17.1	12.4
QUARTZ PEAK SNOTEL	4700	1/01/03	---	7.8	15.0	10.2
RAINY PASS SNOTEL	4780	1/01/03	44	10.5	19.8	19.9
REX RIVER SNOTEL	1900	1/01/03	26	5.3	15.9	13.0
ROCKER PEAK SNOTEL	8000	1/01/03	---	3.9	4.5	6.4
SF THUNDER CK AM	2200	1/01/03	---	2.0E	5.5	5.0
SADDLE MTN SNOTEL	7900	1/01/03	---	5.1	9.5	11.7
SALMON MDWS SNOTEL	4500	1/01/03	21	6.3	6.8	5.3
SASSE RIDGE SNOTEL	4200	1/01/03	31	9.1	17.4	14.7
SAVAGE PASS SNOTEL	6170	1/01/03	43	8.9	10.1	11.7
SAWMILL RIDGE	4700	1/01/03	---	8.0E	15.0	13.8
SCHREIBERS MDW AM	3400	1/01/03	---	7.0E	27.0	23.2
SHEEP CANYON SNOTEL	4050	1/01/03	---	10.3	21.7	15.4
SHERWIN SNOTEL	3200	1/01/03	---	1.7	6.2	5.1
SKALKAHO SNOTEL	7260	1/01/03	---	6.8	8.5	10.3
SKOOKUM CREEK SNOTEL	3920	1/01/03	---	4.3	19.8	10.8
SOURDOUGH GULCH SNTL	4000	1/01/03	2	.4	1.9	--
SPENCER MDW SNOTEL	3400	1/01/03	---	10.6	20.4	12.5
SPIRIT LAKE SNOTEL	3100	1/01/03	---	5.0	9.5	--
SPOTTED BEAR MTN.	7000	1/01/03	---	3.7E	5.1	6.9
SOURDOUGH GULCH SNTL	4000	1/01/03	2	.4	1.9	--
STAHL PEAK SNOTEL	6030	1/01/03	---	14.1	17.3	17.1
STAMPEDE PASS SNOTEL	3860	1/01/03	36	9.2	19.8	19.4
STEVENS PASS SNOTEL	4070	1/01/03	38	9.1	17.6	19.1
STEVENS PASS SAND SD	3700	12/30/02	36	8.1	15.4	15.3
STORM LAKE	7780	12/30/02	18	2.9	2.6	5.5
SUMMERLAND RES CAN.	4200	12/30/02	11	1.7	4.1	4.5
SUNSET SNOTEL	5540	1/01/03	---	2.8	7.0	13.6
SURPRISE LKS SNOTEL	4250	1/01/03	---	16.8	26.1	20.3
TEN MILE LOWER	6600	12/30/02	9	1.2	1.6	3.0
TEN MILE MIDDLE	6800	12/30/02	13	1.9	2.4	4.6
TINKHAM CREEK SNOTEL	3000	1/01/03	---	6.1	14.9	12.3
TOUCHET SNOTEL	5530	1/01/03	34	8.0	18.6	14.7
TRINKUS LAKE	6100	1/01/03	---	12.8E	17.5	19.4
TROUGH #2 SNOTEL	5310	1/01/03	28	5.8	6.9	5.3
TRUMAN CREEK	4060	12/31/02	7	1.2	1.8	2.0
TUNNEL AVENUE	2450	2/03/03	24	5.3	10.4	8.3
TV MOUNTAIN	6800	1/01/03	---	4.2E	6.8	7.8
TWELVEMILE SNOTEL	5600	1/01/03	---	5.8	6.6	7.5
TWIN LAKES SNOTEL	6400	1/01/03	---	11.8	17.9	17.5
TWIN SPIRIT DIVIDE	3480	1/01/03	24	4.7	10.0	6.6
UPPER HOLLAND LAKE	6200	1/01/03	---	9.1E	14.5	15.2
UPPER WHEELER SNOTEL	4400	1/01/03	26	5.0	6.2	5.9
WARM SPRINGS SNOTEL	7800	1/01/03	---	6.4	7.9	9.4
WEASEL DIVIDE	5450	12/30/02	36	7.3	16.3	15.2
WELLS CREEK SNOTEL	4200	1/01/03	39	8.8	15.8	--
WHITE PASS ES SNOTEL	4500	1/01/03	38	8.0	11.2	10.7

January 1, 2003 -
Snowpack, Precipitation and Reservoir Conditions at a Glance

(Water Year = October 1, 2002 - Current Date)



Averages based on
1971-2000 historic data

Data courtesy of
USDA - NRCS
NOAA - NWS

USDA NRCS
Natural Resources Conservation Service

Washington State
Snow, Water and Climate Services

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Helpful Internet Addresses

NRCS Snow Survey and Climate Services Homepages

Washington:
http://www.wa.nrcs.usda.gov/snow/snow.htm

Oregon:
http://www.or.nrcs.usda.gov/snow/snow.htm

Idaho:
http://idsnow.id.nrcs.usda.gov

National Water and Climate Center (NWCC):
http://www.wcc.nrcs.usda.gov

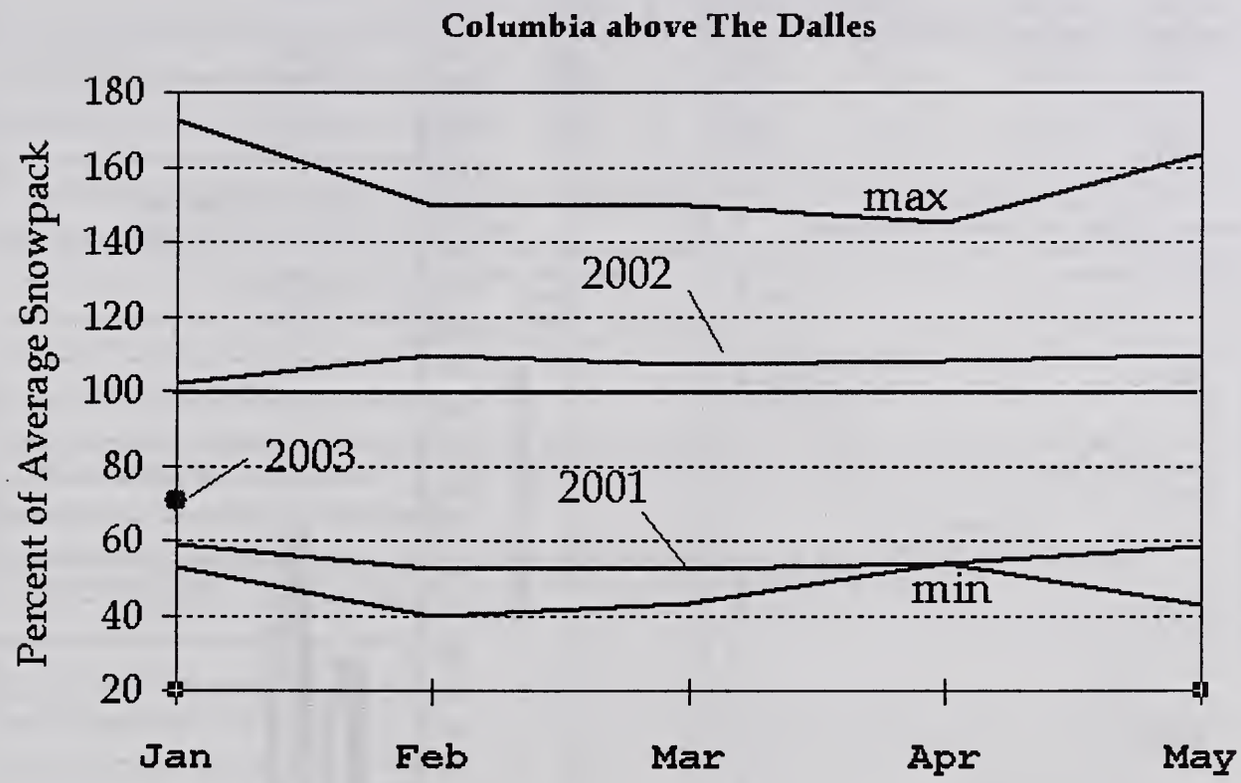
NWCC Anonymous FTP Server:
ftp.wcc.nrcs.usda.gov

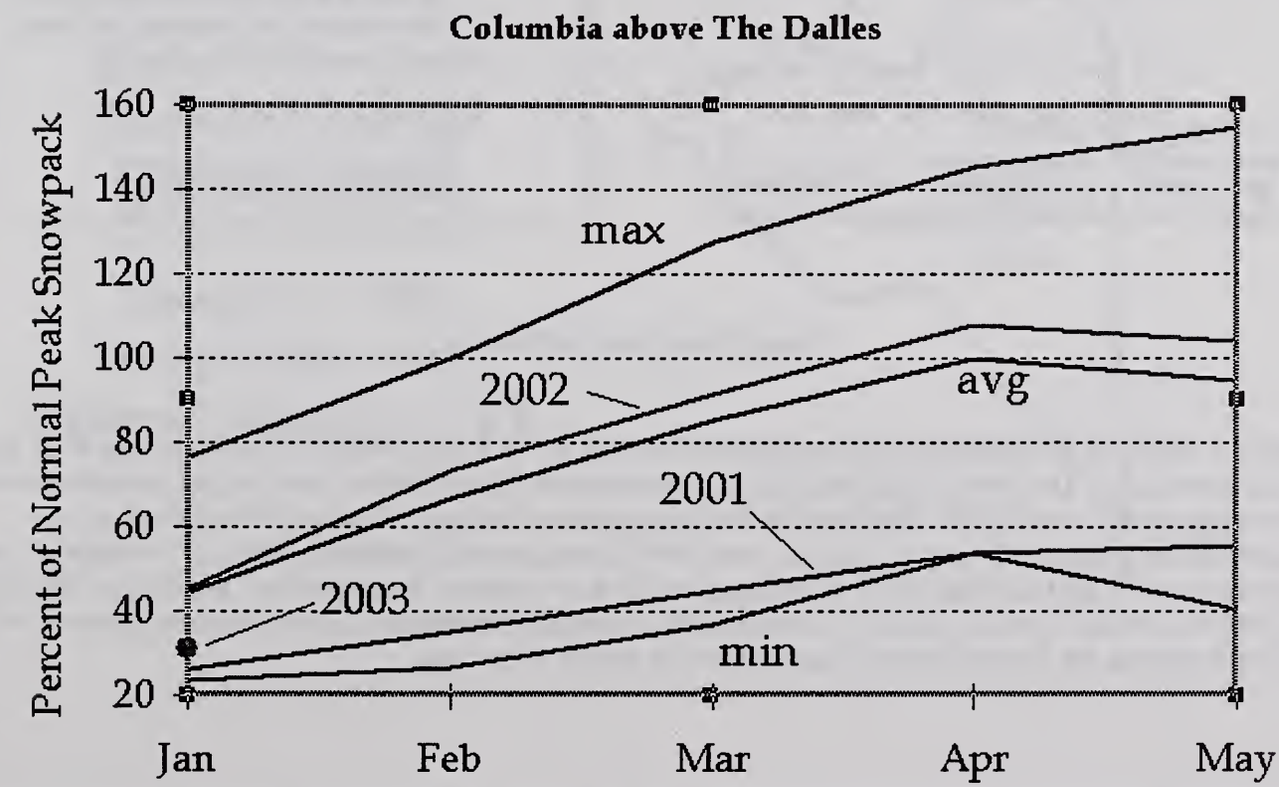
USDA-NRCS Agency Homepages

Washington:
http://www.wa.nrcs.usda.gov/nrcs

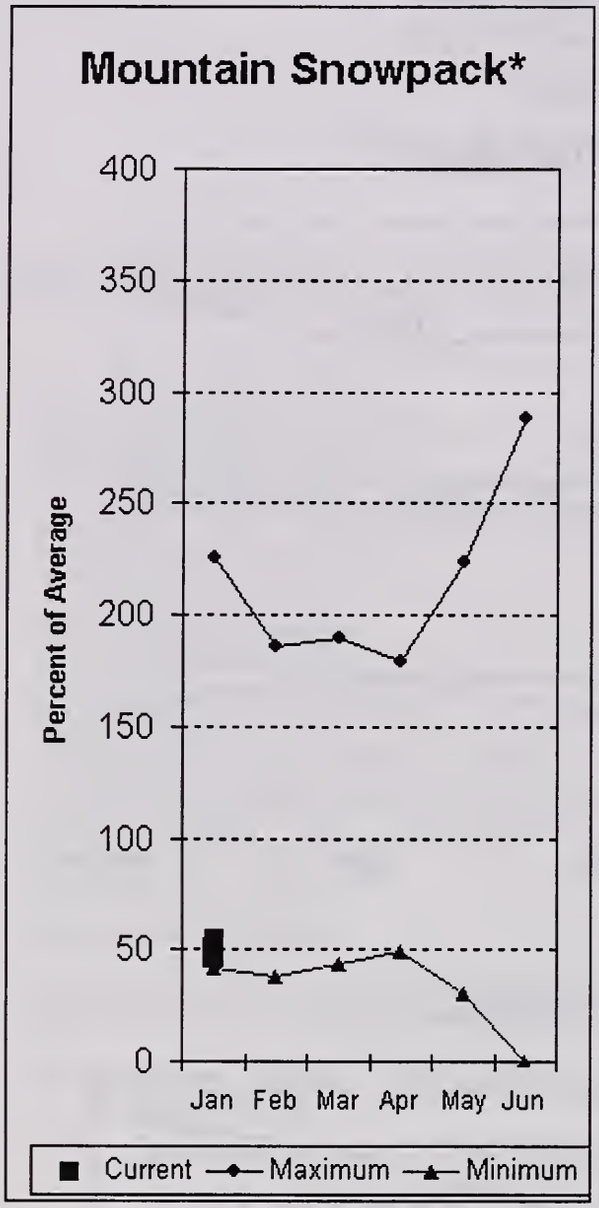
NRCS National:
http://www.ftw.nrcs.usda.gov

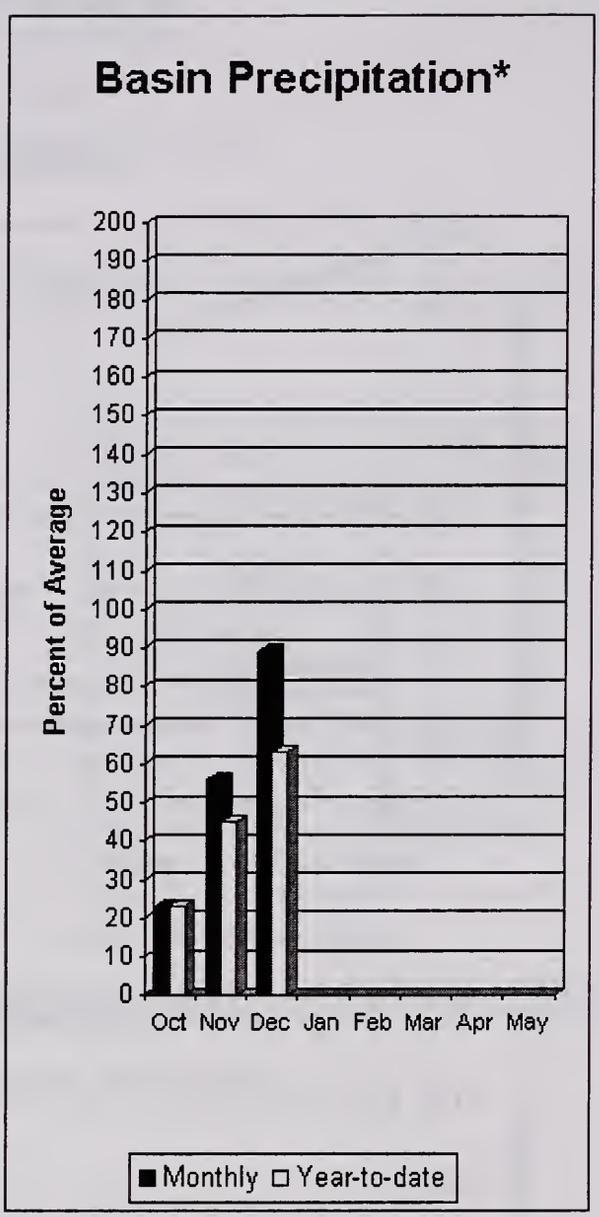
Columbia River Snowpack Summary
January 1, 2003





Spokane River Basin





*Based on selected stations

The January 1 forecasts for summer runoff within the Spokane River Basin are 68% of average near Post Falls and 68% at Long Lake. The forecast is based on a basin snowpack that is 55% of average and precipitation that is 63% of average for the water year. Precipitation for December was below normal at 89% of average. Streamflow on the Spokane River at Long Lake, was 44% of average for December. January 1 storage in Coeur d'Alene Lake, was 79,500-acre feet, 72% of average and 33% of capacity. Snowpack at Quartz Peak SNOTEL site was 76% of average with 7.8 inches of water content. Average temperatures in the Spokane basin were 8 degrees above normal for December and 2 degrees above for the water year.

For more information contact your local Natural Resources Conservation Service office.

SPOKANE RIVER BASIN
Streamflow Forecasts - January 1, 2003

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
SPOKANE near Post Falls (2)	APR-SEP	1250	1464	1810	68	2156	2664	2650
	APR-JUL	1217	1404	1740	68	2076	2570	2552
SPOKANE at Long Lake (2)	APR-JUL	1226	1537	1970	69	2403	3041	2851
	APR-SEP	1321	1643	2100	68	2557	3229	3072

SPOKANE RIVER BASIN
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg

SPOKANE RIVER BASIN
Watershed Snowpack Analysis - January 1, 2003

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
SPOKANE RIVER	1	52	76
NEWMAN LAKE	1	52	76

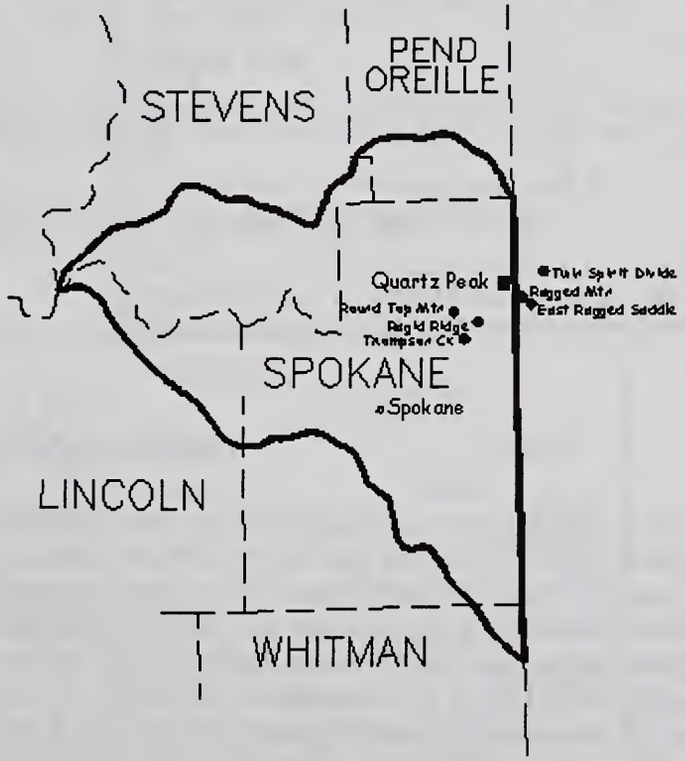
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

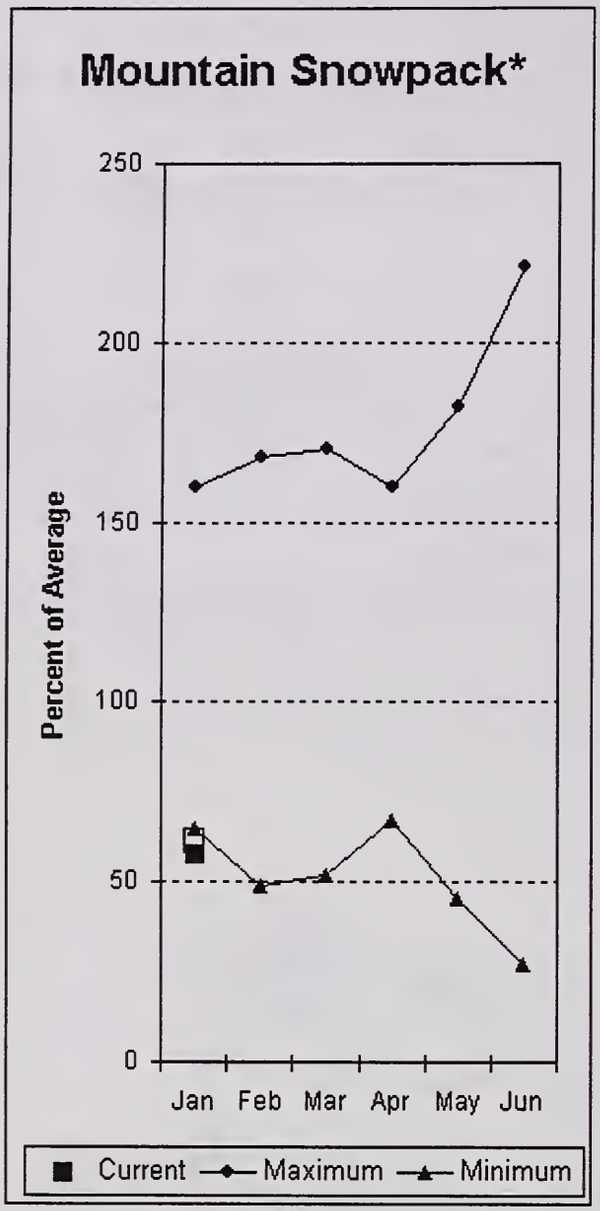
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

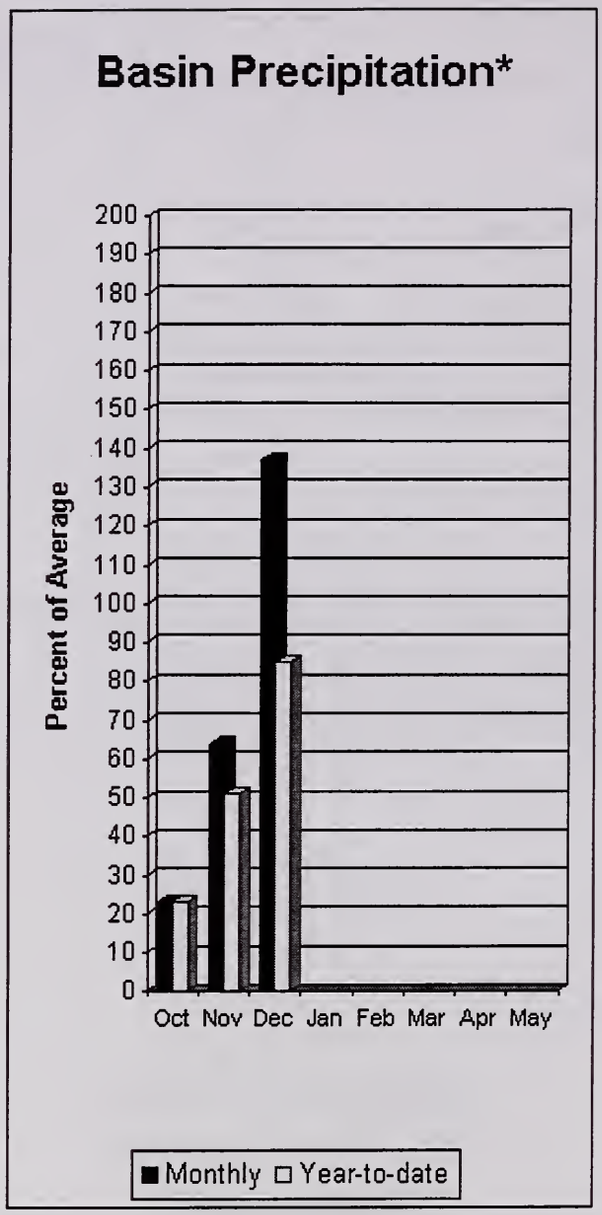
Spokane River Basin
Percent of Average
January 1, 2003

Snowpack - 55%
Precipitation - 63%
Reservoir Capacity - 72%



Colville - Pend Oreille River Basins





*Based on selected stations

The April – September average forecast for the Kettle River streamflow is 91%, Colville at Kettle Falls is 84%, and Priest River near the town of Priest River is 80%. December streamflow was 64% of average on the Pend Oreille River, 71% on the Columbia at the International Boundary and 52% on the Kettle River. January 1 snow cover was 58% of average in the Pend Oreille Basin River Basin. Bunchgrass Meadows SNOTEL site had 13.7 inches of snow water on the snow pillow. Normally Bunchgrass would have 12.6 inches on January 1. Precipitation during December was 137% of average, bringing the year-to-date precipitation to 85% of average. Reservoir storage in Roosevelt and Banks lakes was reported to be 104% of average and 90% of capacity on January 1. Average temperatures were 8-10 degrees above normal for December and 3 degrees above for the water year.

For more information contact your local Natural Resources Conservation Service office.

Streamflow Forecasts - January 1, 2003

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter ======>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
PEND OREILLE Lake Inflow (2)	APR-JUL	4285	6759	8440	67	10121	12595	12700
	APR-SEP	4676	7381	9220	66	11059	13764	13900
PRIEST near Priest River (1,2)	APR-JUL	444	586	650	80	714	856	814
	APR-SEP	365	592	695	80	798	1025	868
PEND OREILLE bl Box Canyon (2)	APR-JUL	5025	7166	8620	67	10074	12215	12900
	APR-SEP	4866	7571	9410	67	11249	13954	14100
CHAMOKANE CREEK near Long Lake	MAY-AUG	4.2	6.5	8.6	84	10.7	13.8	10.2
COLVILLE at Kettle Falls	APR-SEP	65	97	118	84	139	171	141
	APR-JUL	56	86	106	83	126	156	128
KETTLE near Laurier	APR-SEP	1389	1628	1790	91	1952	2191	1972
	APR-JUL	1323	1547	1700	91	1853	2077	1874
COLUMBIA at Birchbank (1,2)	APR-JUL	21007	26710	29300	84	31890	37593	34900
	APR-SEP	26113	33256	36500	84	39744	46887	43500
COLUMBIA at Grand Coulee Dm (1,2)	APR-SEP	33045	45530	51200	80	56870	69355	63990
	APR-JUL	27876	38345	43100	80	47855	58324	53850

COLVILLE - PEND OREILLE RIVER BASINS
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
ROOSEVELT	5232.0	4646.4	4416.3	4471.2
BANKS	715.0	690.5	687.1	640.0

COLVILLE - PEND OREILLE RIVER BASINS
Watershed Snowpack Analysis - January 1, 2003

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
COLVILLE RIVER	0	0	0
PEND OREILLE RIVER	2	71	50
KETTLE RIVER	0	56	0

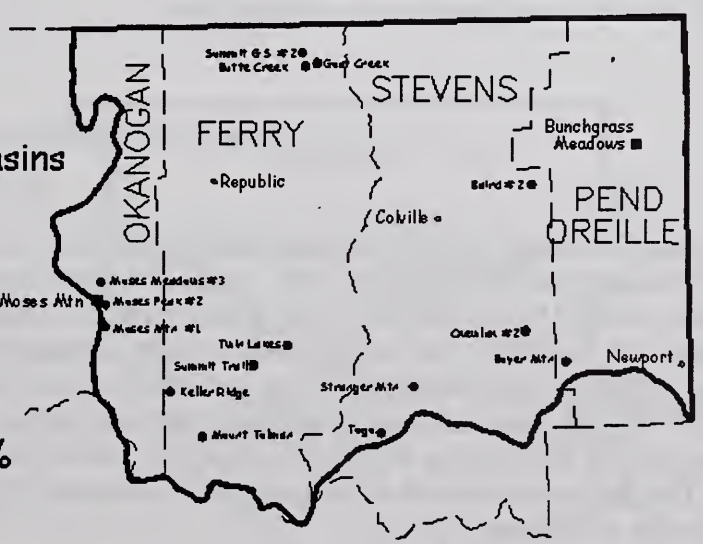
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

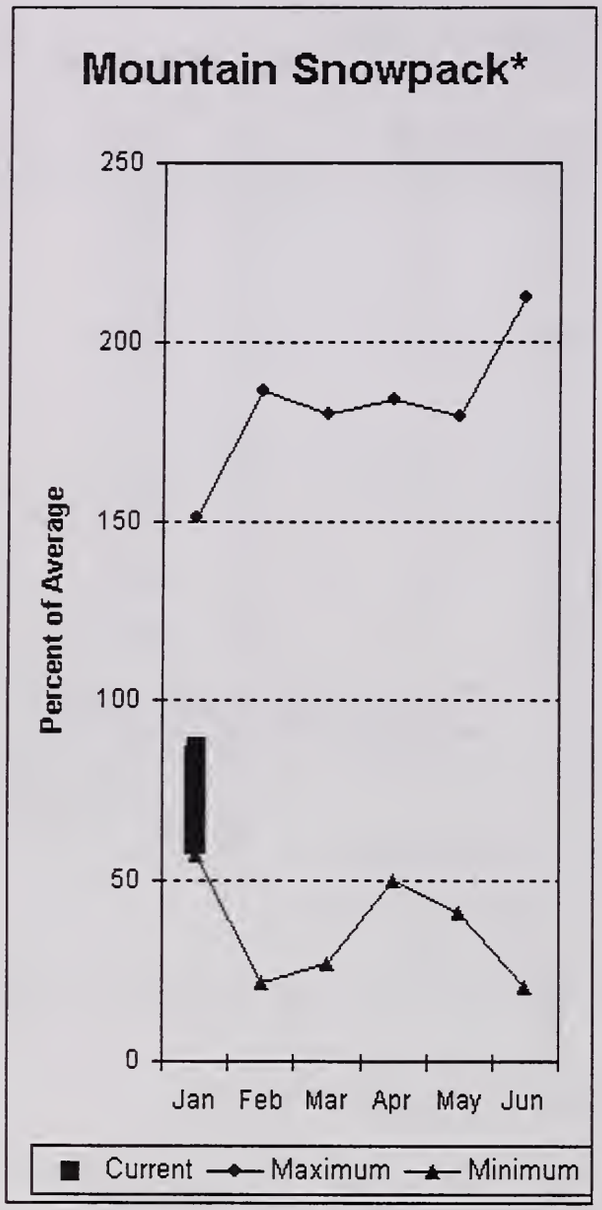
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

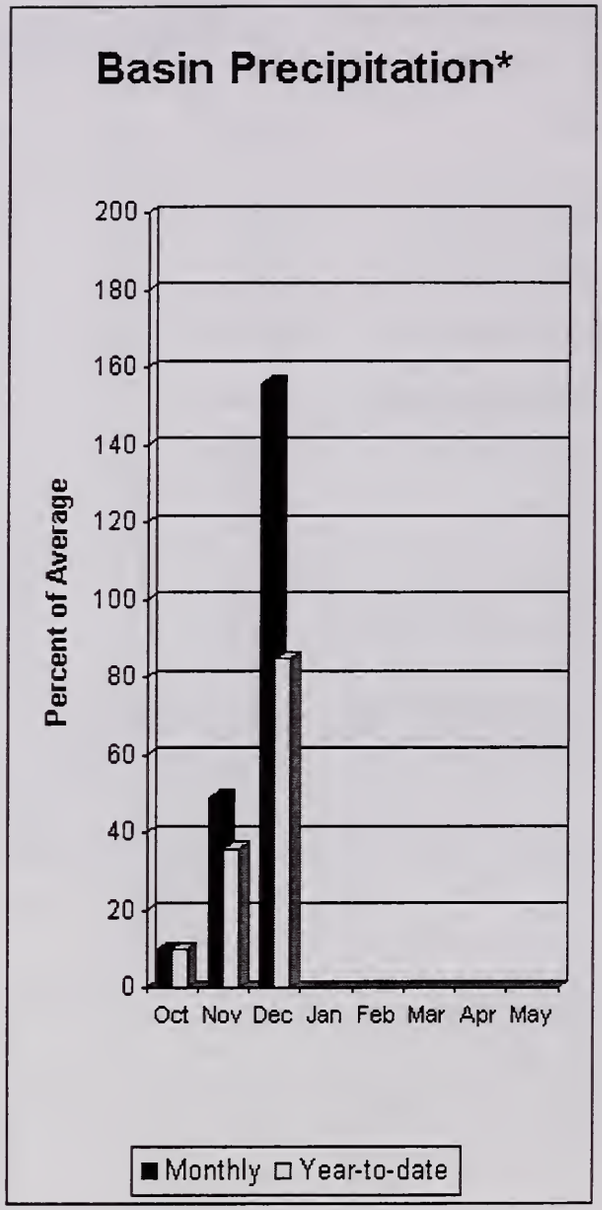
Colville-Pend Oreille River Basins
Percent of Average
January 1, 2003

Snowpack - 58%
Precipitation - 85%
Reservoir Capacity - 104%



Okanogan - Methow River Basins





*Based on selected stations

Summer runoff average forecast for the Okanogan River is 74%, Similkameen River is 76%, Methow River is 75% and Salmon Creek is 78%. January 1 snow cover on the Okanogan was 70% of average and Methow was 61%. December precipitation in the Okanogan-Methow was 156% of average, with precipitation for the water year at 85% of average. December streamflow for the Methow River was 64% of average, 60% for the Okanogan River and 48% for the Similkameen. Snow-water content at Salmon Meadows SNOTEL was 6.3 inches. Average for this site is 5.3 inches on January 1. Combined storage in the Conconully Reservoirs was 6,100-acre feet, which is 26% of capacity and 38% of the January 1 average. Temperatures were 8-10 degrees above normal for the past month and 2-3 degrees above normal for the water year.

For more information contact your local Natural Resources Conservation Service office.

Streamflow Forecasts - January 1, 2003

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	50% (Most Probable) (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
SIMILKAMEEN near Nighthawk (1)	APR-JUL	370	824	1030	76	1236	1690	1350
	APR-SEP	326	858	1100	76	1342	1874	1450
OKANOGAN near Tonasket (1)	APR-JUL	368	920	1170	74	1420	1972	1580
	APR-SEP	343	1001	1300	74	1599	2257	1766
SALMON CREEK near Conconully	APR-JUL	3.8	9.5	15.6	78	22	31	20
	APR-SEP	4.1	10.0	16.3	78	23	32	21
BEAVER CREEK below SF near Twisp	APR-SEP	2.3	4.5	8.0	66	11.5	16.7	12.1
	APR-JUL	1.7	3.7	7.1	64	10.5	15.6	11.1
METHOW RIVER near Pateros	APR-SEP	345	580	740	75	900	1135	985
	APR-JUL	393	561	675	74	789	957	911

OKANOGAN - METHOW RIVER BASINS
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
SALMON LAKE	10.5	3.0	3.5	8.5
CONCONULLY RESERVOIR	13.0	3.1	2.6	7.7

OKANOGAN - METHOW RIVER BASINS
Watershed Snowpack Analysis - January 1, 2003

Watershed	Number of Data Sites	This Year as % of Last Yr	This Year as % of Average
OKANOGAN RIVER	8	63	70
OMAK CREEK	1	66	97
SANPOIL RIVER	0	0	0
SIMILKAMEEN RIVER	0	24	0
TOATS COULEE CREEK	0	0	0
CONCONULLY LAKE	1	93	119
METHOW RIVER	3	62	61

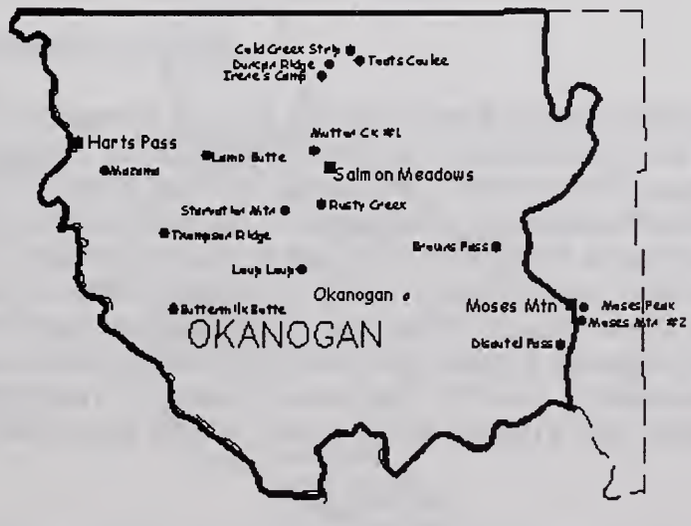
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

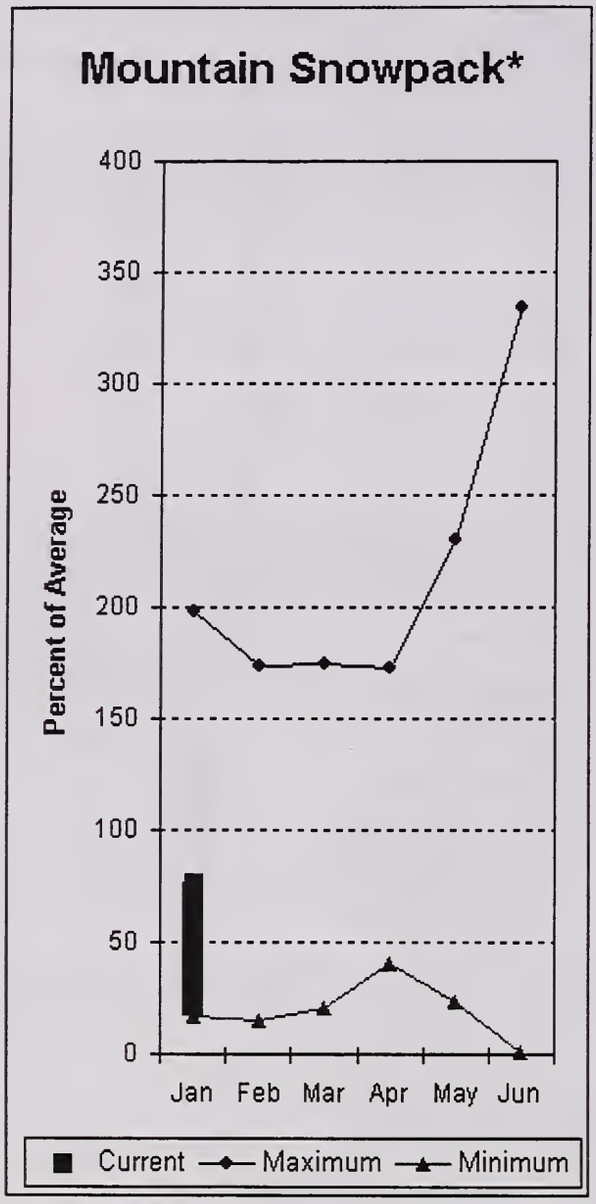
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

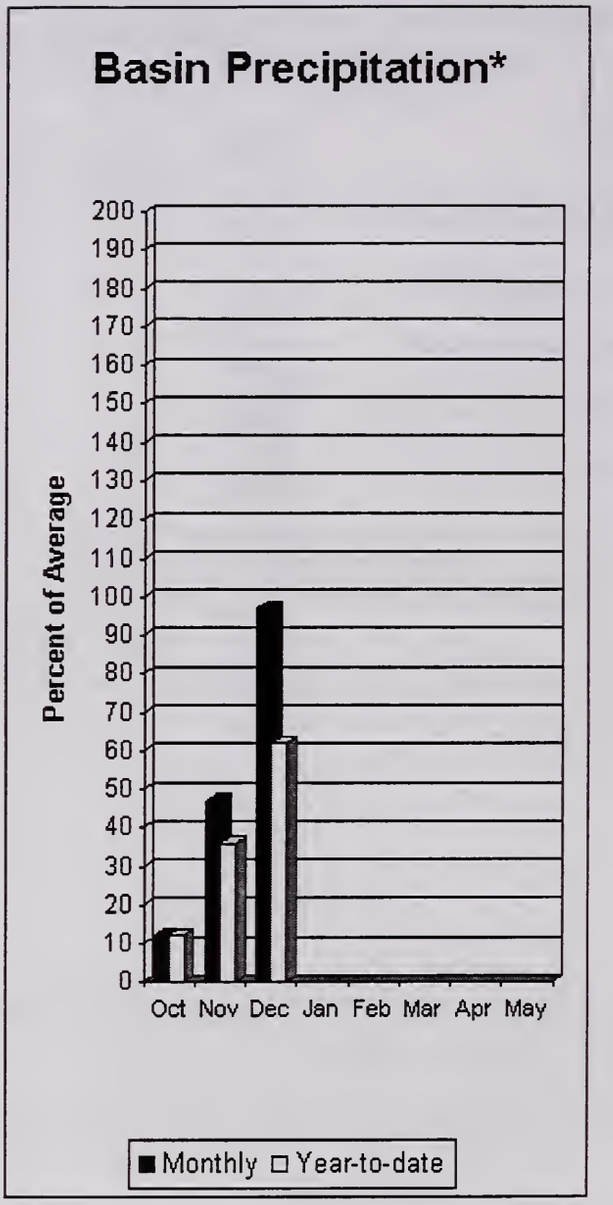
Okanogan-Methow River Basins
Percent of Average
January 1, 2003

Snowpack - 87%
Precipitation - 85%
Reservoir Capacity - 38%



Wenatchee - Chelan River Basins





*Based on selected stations

Precipitation during December was 97% of average in the basin and 62% for the year-to-date. Runoff for Entiat River is forecast to be 68% of average for the summer. The January-September average forecast for Chelan River is 76%, Wenatchee River at Plain is 70% and Stehekin is 74%. Icicle, Stemilt and Squilchuck creeks are all expected to fall into the same forecast range. December average streamflows on the Chelan River were 60% and on the Wenatchee River 35%. January 1 snowpack in the Wenatchee River Basin was 60% of average; the Chelan, 58%; the Entiat, 66%; Stemilt Creek, 85% and Colockum Creek, 109%. Reservoir storage in Lake Chelan was 351,100-acre feet, 88% of January 1 average and 52% of capacity. Lyman Lake SNOTEL had the most snow water with 21.4 inches of water. This site would normally have 29.7 inches on January 1. Temperatures were 8 degrees above normal for December and 1 degree above normal for the water year.

For more information contact your local Natural Resources Conservation Service office.

Streamflow Forecasts - January 1, 2003

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter ======>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
CHELAN RIVER near Chelan	APR-SEP	749	839	900	76	961	1051	1185
	APR-JUL	670	742	790	76	838	910	1046
STEHEKIN near STEHEKIN	APR-SEP	498	565	610	74	655	722	827
	APR-JUL	442	485	515	74	545	588	699
ENTIAT RIVER near Ardenvoir	APR-SEP	113	133	162	68	191	234	238
	APR-JUL	84	123	150	69	177	216	216
WENATCHEE at Plain	APR-SEP	644	722	840	70	958	1132	1198
	APR-JUL	594	659	755	70	851	992	1078
WENATCHEE R. at Peshastin	APR-SEP	730	1010	1200	73	1390	1670	1635
	APR-JUL	539	861	1080	73	1299	1621	1481
STEMILT nr Wenatchee (miners in)	MAY-SEP	48	77	97	70	117	146	138
ICICLE CREEK near Leavenworth	APR-SEP	206	227	253	73	279	317	345
	APR-JUL	189	209	233	73	257	293	318
COLUMBIA R. bl Rock Island Dam (2)	APR-SEP	40279	49639	56000	81	62361	71721	69540
	APR-JUL	30635	40737	47600	81	54463	64565	59020

WENATCHEE - CHELAN RIVER BASINS
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
CHELAN LAKE	676.1	351.1	409.4	396.9

WENATCHEE - CHELAN RIVER BASINS
Watershed Snowpack Analysis - January 1, 2003

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
CHELAN LAKE BASIN	4	51	58
ENTIAT RIVER	1	72	66
WENATCHEE RIVER	11	57	60
SQUILCHUCK CREEK	0	0	0
STEMILT CREEK	1	81	85
COLOCKUM CREEK	1	84	109

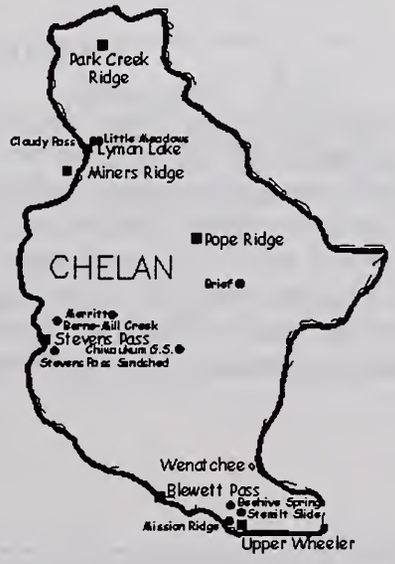
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

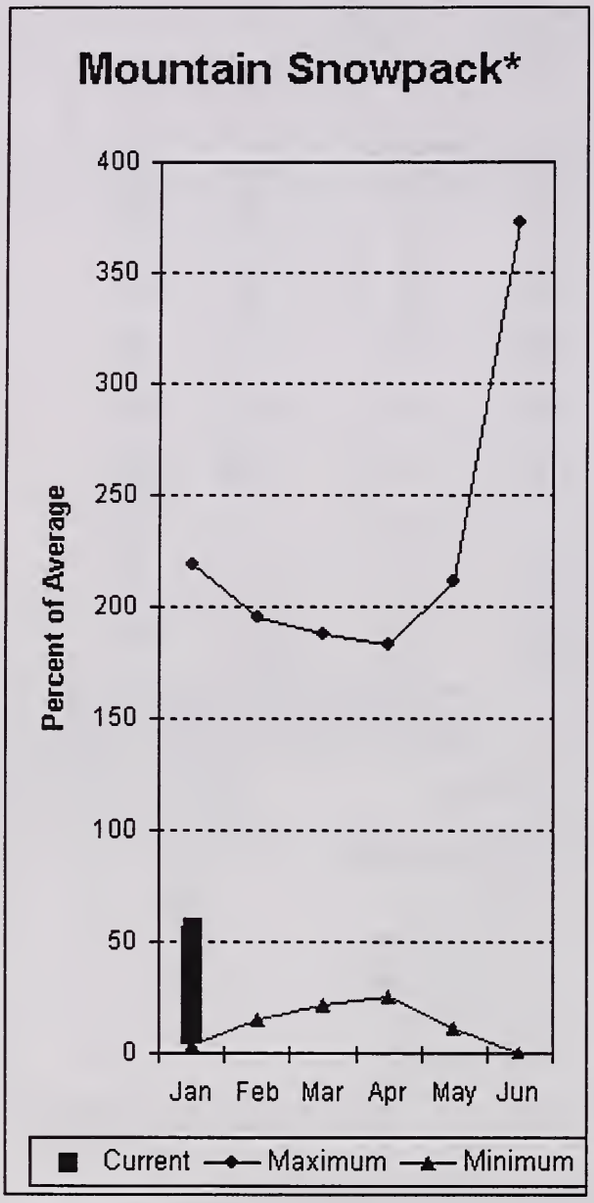
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

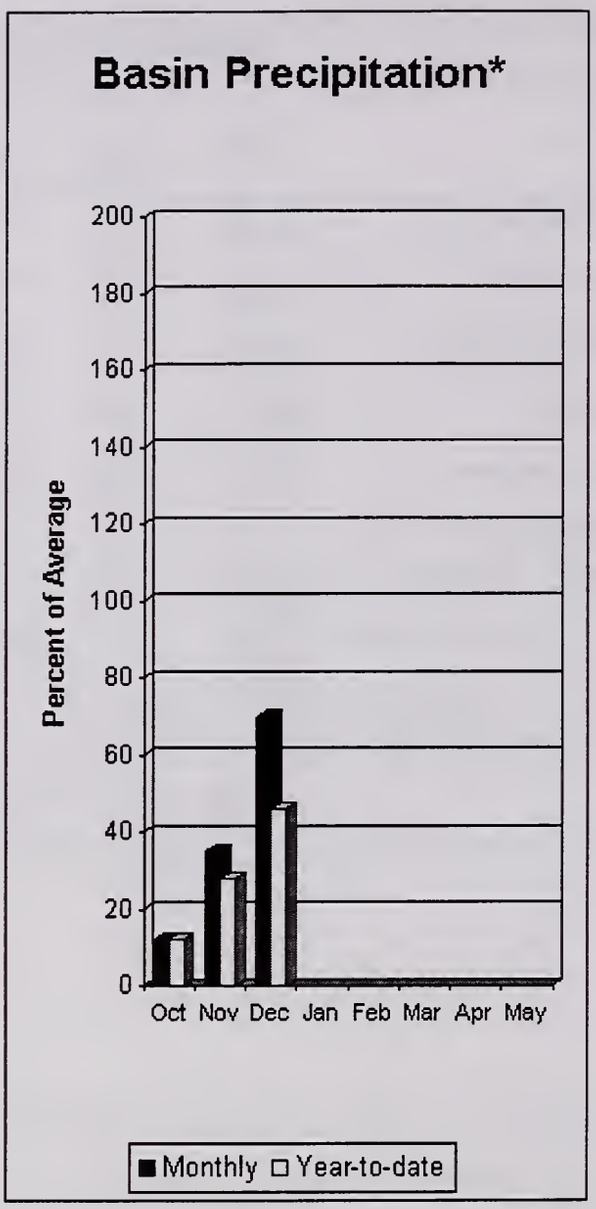
Wenatchee-Chelan River Basins
Percent of Average
January 1, 2003

Snowpack - 76%
Precipitation - 62%
Reservoir Capacity - 88%



Upper Yakima River Basin





*Based on selected stations

January 1 reservoir storage for the Upper Yakima reservoirs was 285,900-acre feet, 72% of average. Forecasts for the Yakima River at Cle Elum are 72% of average and the Teanaway River near Cle Elum is at 71%. Lake inflows are all forecasted to fall into the same range this summer. December streamflows within the basin were Yakima near Cle Elum at 28% and Cle Elum River near Roslyn at 30%. January 1 snowpack was 57% based upon 9 snow courses and SNOTEL readings within the Upper Yakima Basin. Precipitation was 70% of average for December and 46% year-to-date for water. Volume forecasts for the Yakima Basin are for natural flow. As such, they January differ from the U.S. Bureau of Reclamation's forecast for the total water supply available, which includes irrigation return flow.

For more information contact your local Natural Resources Conservation Service office.

Streamflow Forecasts - January 1, 2003

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
KEECHELUS LAKE INFLOW	APR-JUL	63	75	90	74	105	127	121
	APR-SEP	71	84	100	75	116	140	133
KACHESS LAKE INFLOW	APR-JUL	54	65	79	71	93	115	111
	APR-SEP	59	71	86	72	101	124	120
CLE ELUM LAKE INFLOW	APR-JUL	220	248	290	71	332	394	408
	APR-SEP	242	273	320	71	367	437	448
YAKIMA at Cle Elum	APR-JUL	439	499	590	72	681	815	822
	APR-SEP	488	552	650	72	748	892	903
TEANAWAY near Cle Elum	APR-JUL	74	86	102	71	118	142	143
	APR-SEP	76	88	104	71	120	144	146

UPPER YAKIMA RIVER BASIN
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
KEECHELUS	157.8	17.8	59.2	78.0
KACHESS	239.0	115.0	66.7	125.5
CLE ELUM	436.9	153.1	114.9	194.7

UPPER YAKIMA RIVER BASIN
Watershed Snowpack Analysis - January 1, 2003

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
UPPER YAKIMA RIVER	9	53	57

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

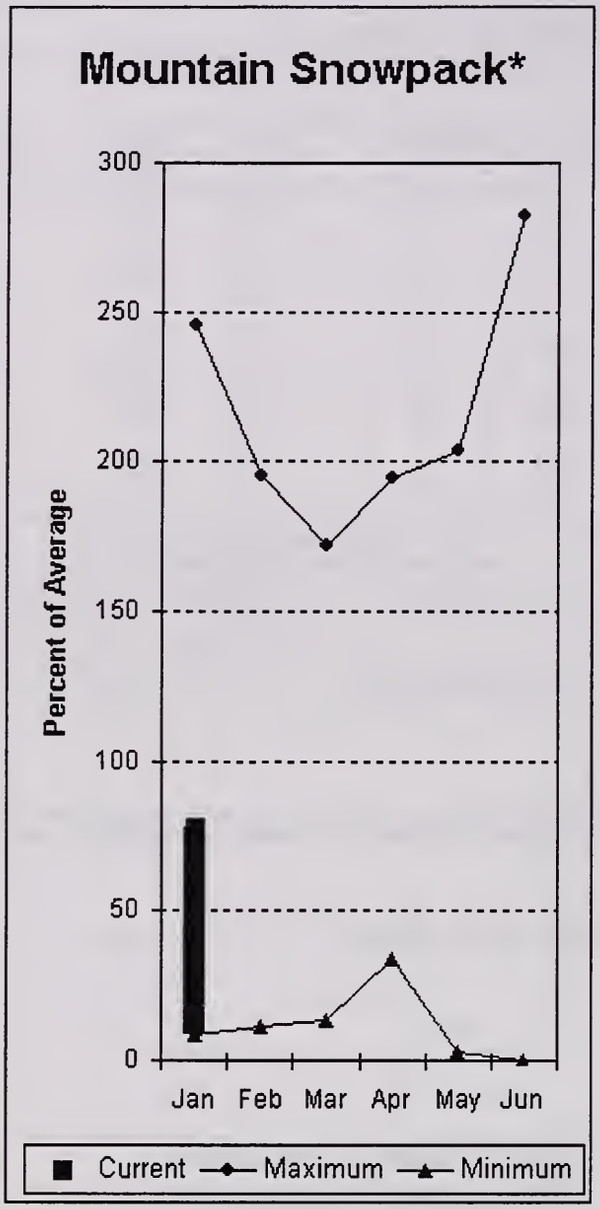
The average is computed for the 1971-2000 base period.

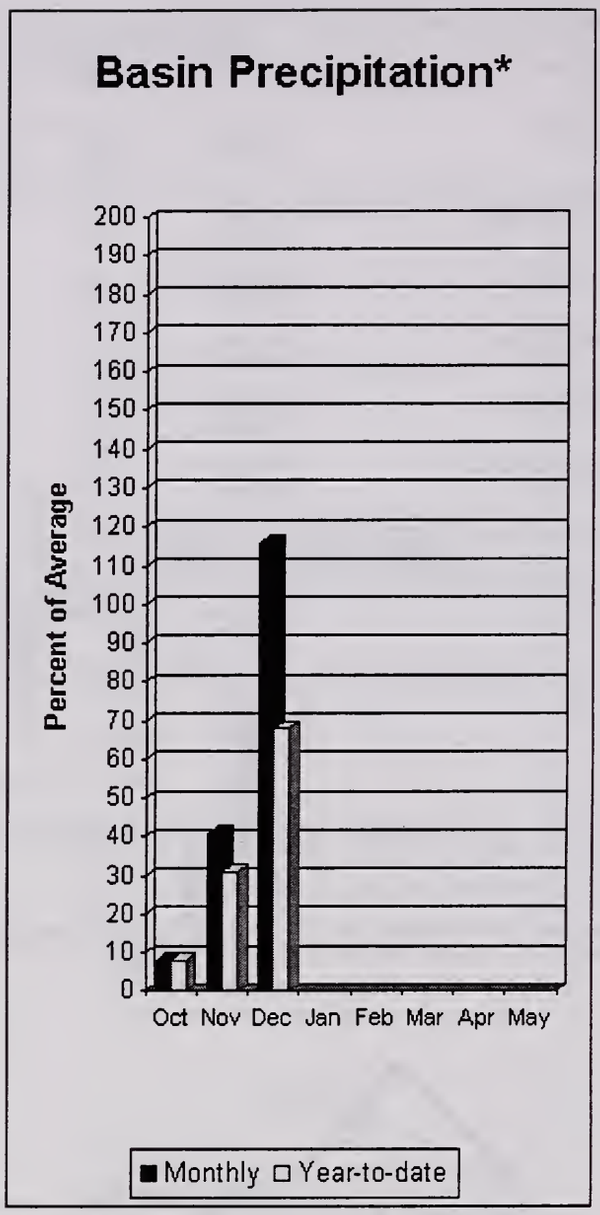
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

Upper Yakima River Basin
Percent of Average
January 1, 2003

Snowpack - 57%
Precipitation - 46%
Reservoir Capacity - 72%

Lower Yakima River Basin





*Based on selected stations

December average streamflows within the basin were: Yakima River near Parker, 37%; Naches River near Naches, 35%; and Yakima River at Kiona, 48%. January 1 reservoir storage for Bumping and Rimrock reservoirs was 78,900-acre feet, 71% of average. Forecast averages for Yakima River near Parker are 70%; American River near Nile, 73%; Ahtanum Creek, 70%; and Klickitat River near Glenwood, 88%. January 1 snowpack was 72% based upon 8 snow courses and SNOTEL readings within the Lower Yakima Basin. Precipitation was 116% of average for December and 68% year-to-date for water. Temperatures were 8 degrees above normal for the month and 1 degree above average for the water year. Volume forecasts for Yakima Basin are for natural flow. As such, they January differ from the U.S. Bureau of Reclamation's forecast for the total water supply available, which includes irrigation return flow.

For more information contact your local Natural Resources Conservation Service office.

Streamflow Forecasts - January 1, 2003

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter ======>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
BUMPING LAKE INFLOW	APR-SEP	75	89	105	78	121	145	134
	APR-JUL	60	81	95	78	109	130	122
AMERICAN RIVER near Nile	APR-SEP	55	73	86	73	99	117	118
	APR-JUL	51	68	80	74	92	109	108
RIMROCK LAKE INFLOW	APR-SEP	130	148	170	70	192	225	242
	APR-JUL	97	124	143	70	162	189	204
NACHES near Naches	APR-SEP	365	490	575	69	660	785	837
	APR-JUL	325	442	521	69	600	717	758
AHTANUM CREEK nr Tampico (2)	APR-SEP	11.0	24	32	70	41	53	46
	APR-JUL	9.8	21	29	69	37	48	42
YAKIMA near Parker	APR-SEP	846	1140	1340	70	1540	1834	1918
	APR-JUL	751	1027	1215	70	1403	1679	1731
KLICKITAT near Glenwood	APR-JUN	79	101	115	89	129	151	129
	APR-SEP	99	126	144	88	162	189	163

LOWER YAKIMA RIVER BASIN
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
BUMPING LAKE	33.7	5.5	14.9	10.3
RIMROCK	198.0	73.4	54.9	101.1

LOWER YAKIMA RIVER BASIN
Watershed Snowpack Analysis - January 1, 2003

Watershed	Number of Data Sites	This Year as % of Last Yr	Average

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

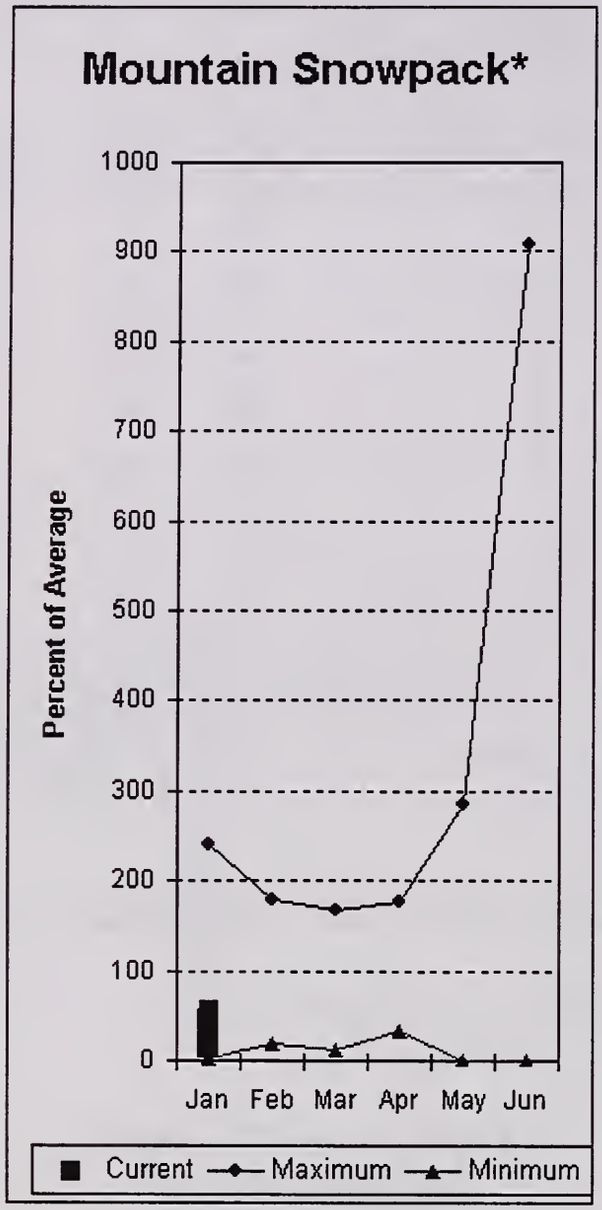
The average is computed for the 1971-2000 base period.

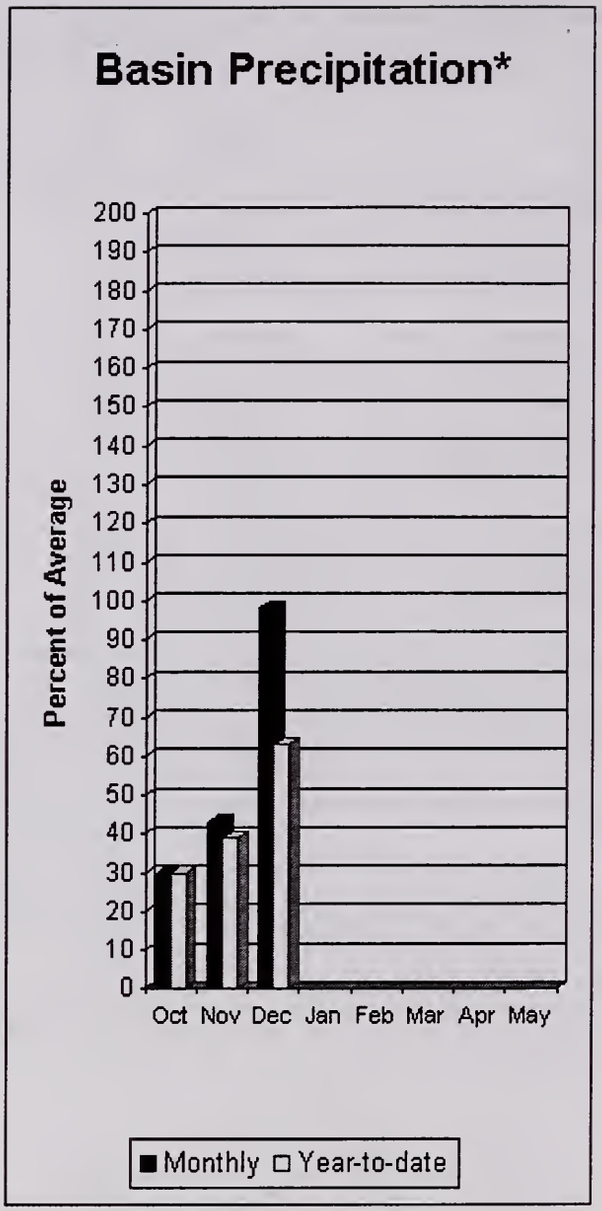
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

Lower Yakima River Basin
Percent of Average
Janaury 1, 2003

Snowpack - 78%
Precipitation - 68%
Reservoir Capacity - 71%

Walla Walla River Basin





*Based on selected stations

December precipitation was 92% of average, maintaining the year-to-date precipitation at 59% of average. Snowpack in the basin was 57% of average. Streamflow forecasts are 54% of average for Mill Creek and 68% for the SF Walla Walla near Milton-Freewater. December streamflow was 30% of average for the Walla Walla River. Average temperatures were 9 degrees above normal for December and 1 degree above average for the water year.

For more information contact your local Natural Resources Conservation Service office.

Streamflow Forecasts - January 1, 2003

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	50% (Most Probable) (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
MILL CREEK at Walla Walla	APR-SEP	4.6	5.9	9.9	54	13.9	19.7	18.4
	APR-JUL	4.5	5.8	9.8	54	13.8	19.6	18.2
SF WALLA WALLA near Milton-Freewater	APR-JUL	27	32	35	66	40	47	53
	APR-SEP	36	41	45	68	50	58	66

WALLA WALLA RIVER BASIN
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg

WALLA WALLA RIVER BASIN
Watershed Snowpack Analysis - January 1, 2003

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
WALLA WALLA RIVER	1	43	54

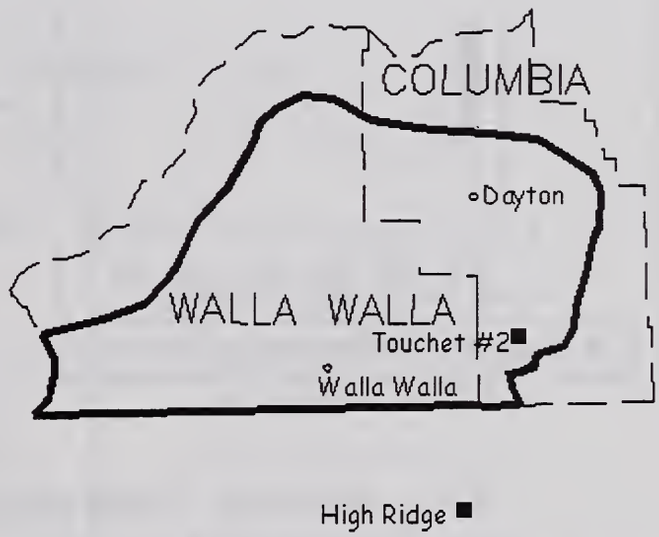
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

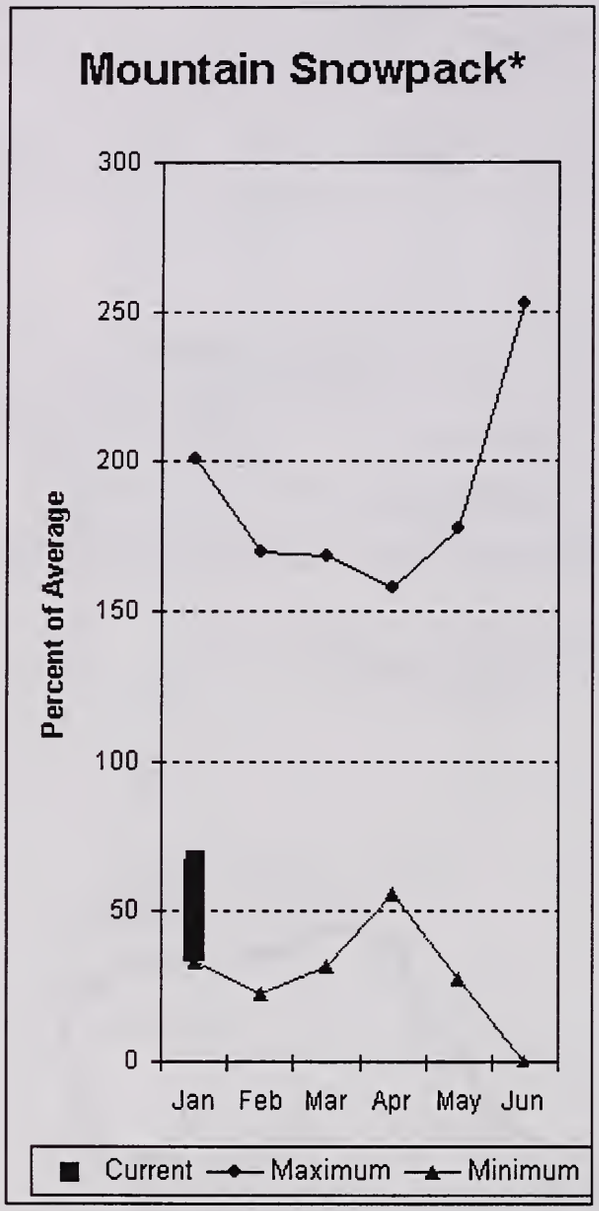
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

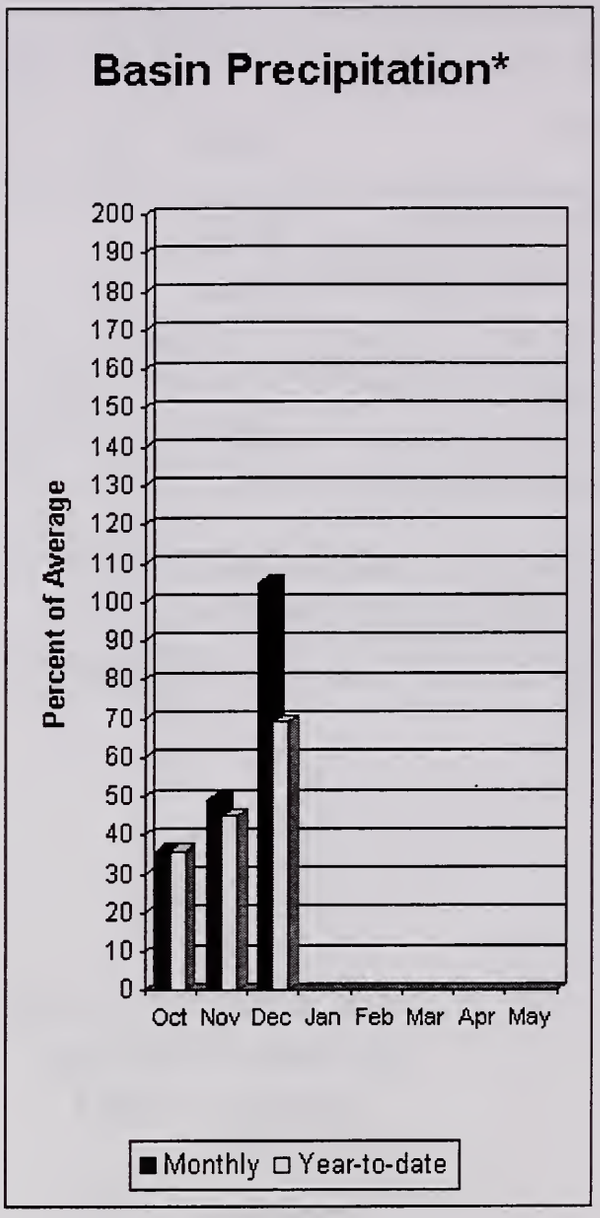
Walla Walla River Basin
Percent of Average
January 1, 2003

Snowpack - 57%
Precipitation - 63%



Lower Snake River Basin





*Based on selected stations

The April - September forecast is for 70% for Clearwater River at Spalding. The Snake and Grande Ronde rivers can expect summer flows to be about 73% and 79% of normal respectively. December precipitation was 103% of average, bringing the year-to-date precipitation to 68% of average. January 1 snowpack readings averaged 67% of normal. December streamflow was 53% of average for Snake River below Lower Granite Dam and 34% for Grande Ronde River near Troy. Average temperatures were 7 degrees above normal for December and 1 degree above normal for the water year.

For more information contact your local Natural Resources Conservation Service office.

Streamflow Forecasts - January 1, 2003

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter ======>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg (1000AF
GRANDE RONDE at Troy (1)	MAR-JUL	507	1018	1250	79	1482	1993	1578
	APR-SEP	416	880	1090	79	1300	1764	1372
CLEARWATER at Spalding (1,2)	APR-JUL	3305	4013	5180	70	6347	8918	7435
	APR-SEP	3624	4723	5470	70	6637	9208	7850
SNAKE blw Lower Granite Dam (1,2)	APR-JUL	4927	12404	15800	73	19196	26673	21550
	APR-SEP	5482	13884	17700	73	21516	29918	24100

LOWER SNAKE RIVER BASIN
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg

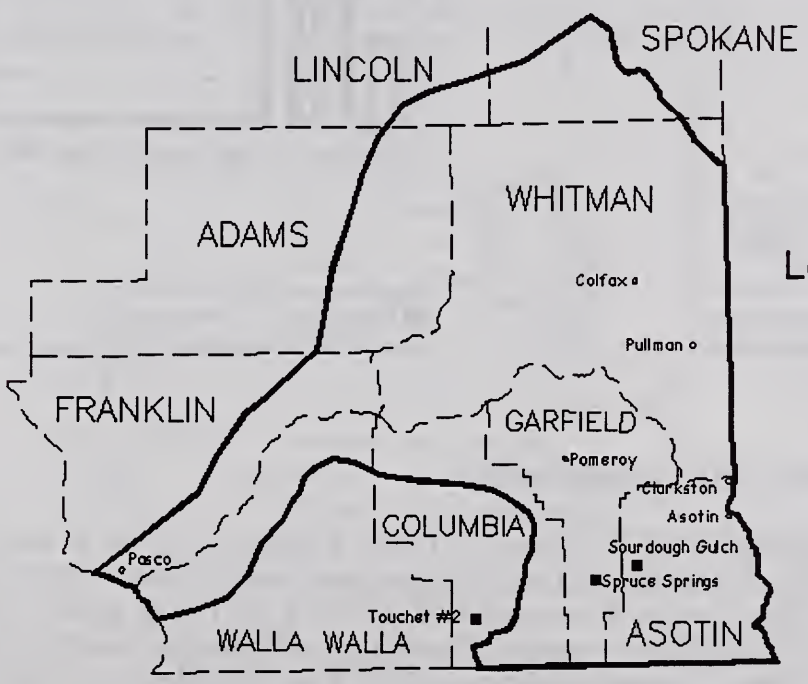
LOWER SNAKE RIVER BASIN
Watershed Snowpack Analysis - January 1, 2003

Watershed	Number of Data Sites	This Year as % o Last Yr	Averag
LOWER SNAKE, GRANDE RONDE	0	0	0

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table

The average is computed for the 1971-2000 base period.

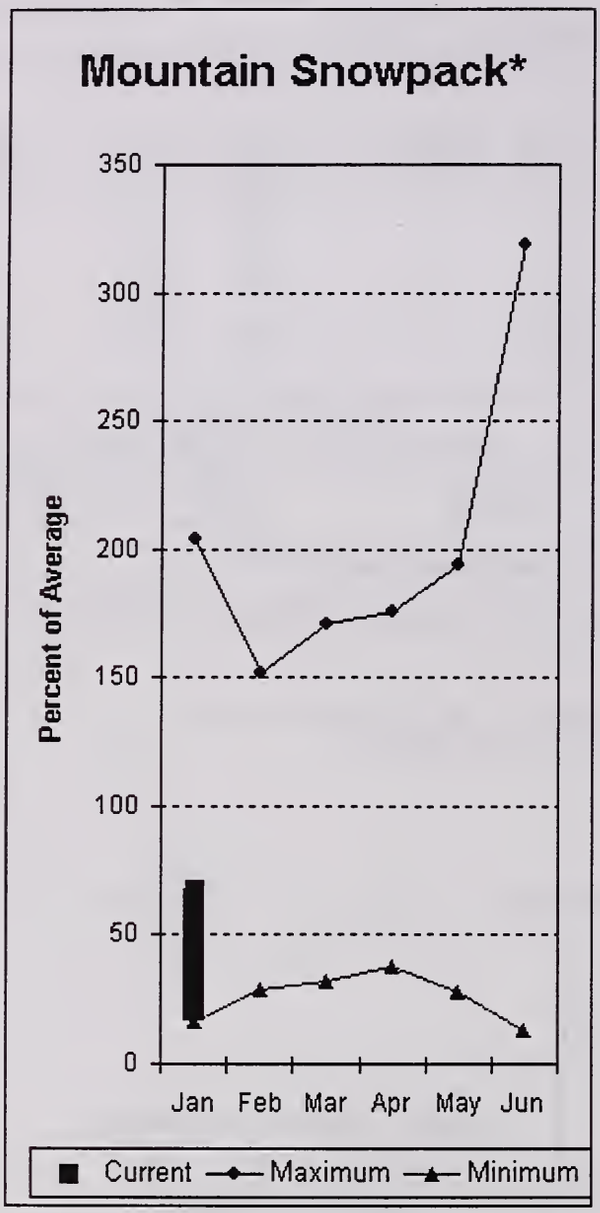
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

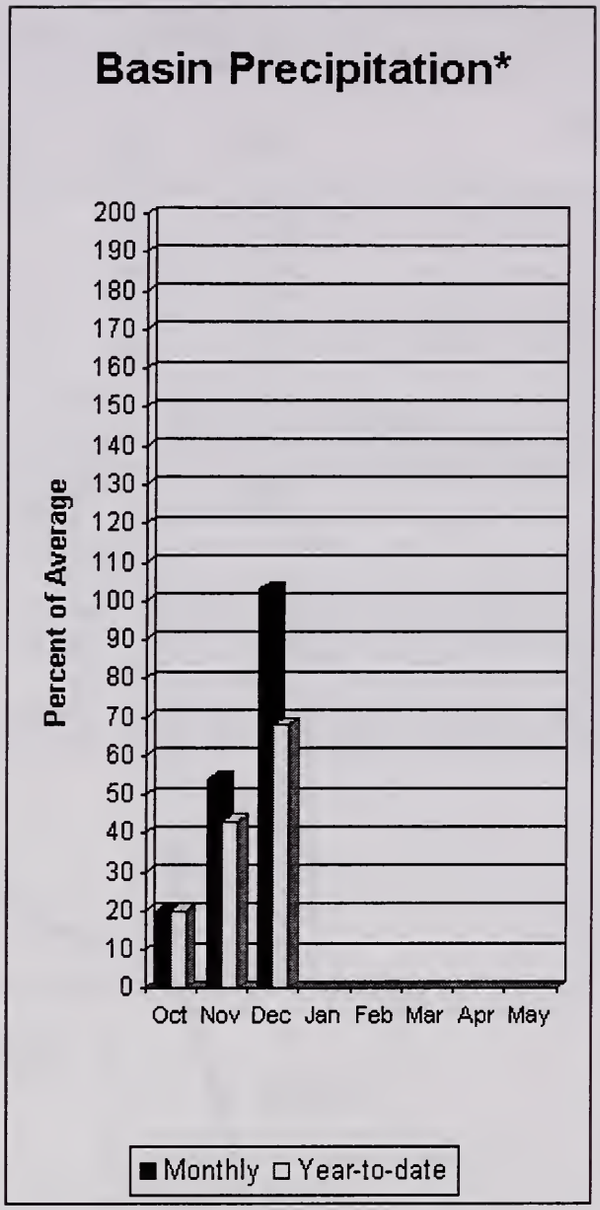


Lower Snake River Basin
Percent of Average
Janaury 1, 2003

Snowpack - 67%
Precipitation - 69%

Cowlitz - Lewis River Basins





*Based on selected stations

Forecasts for April – September streamflows within the basin are Lewis River at Ariel, 89% and Cowlitz River at Castle Rock, 82% of average. The Columbia at The Dalles is forecasted to have 75% flows this summer. December average streamflow for Cowlitz River was 36% and 61% for Lewis River. The Columbia River at the Dalles was also low at 58% of average. December precipitation was 103% of average and the water-year average was 68%. January 1 snow cover for Cowlitz River was 56%, and Lewis River was 79% of average. Average temperatures were 5 degrees above normal during December and have averaged 2-3 degrees above throughout the water year. **A new SNOTEL site called Swift Creek was installed in the Lewis River Basin last summer. This site will provide information for managing Swift Reservoir.**

For more information contact your local Natural Resources Conservation Service office.

Streamflow Forecasts - January 1, 2003

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter ======>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
LEWIS at Ariel (2)	APR-JUL	605	792	920	89	1048	1235	1031
	APR-SEP	724	918	1050	89	1182	1376	1176
COWLITZ R. bl Mayfield Dam (2)	APR-SEP	200	1016	1570	82	2124	2940	1922
	APR-JUL	12.0	827	1380	82	1933	2748	1692
COWLITZ R. at Castle Rock (2)	APR-SEP	243	1378	2150	82	2922	4057	2639
	APR-JUL	1288	1635	1870	82	2105	2452	2279
KLICKITAT near Glenwood	APR-JUN	79	101	115	89	129	151	129
	APR-SEP	99	126	144	88	162	189	163
COLUMBIA R. at The Dalles (2)	APR-SEP	51024	64704	74000	75	83296	96976	98650
	APR-JUL	38432	53358	63500	75	73642	88568	84650

COWLITZ - LEWIS RIVER BASINS
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg

COWLITZ - LEWIS RIVER BASINS
Watershed Snowpack Analysis - January 1, 2003

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
LEWIS RIVER	4	53	79
COWLITZ RIVER	6	50	56

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

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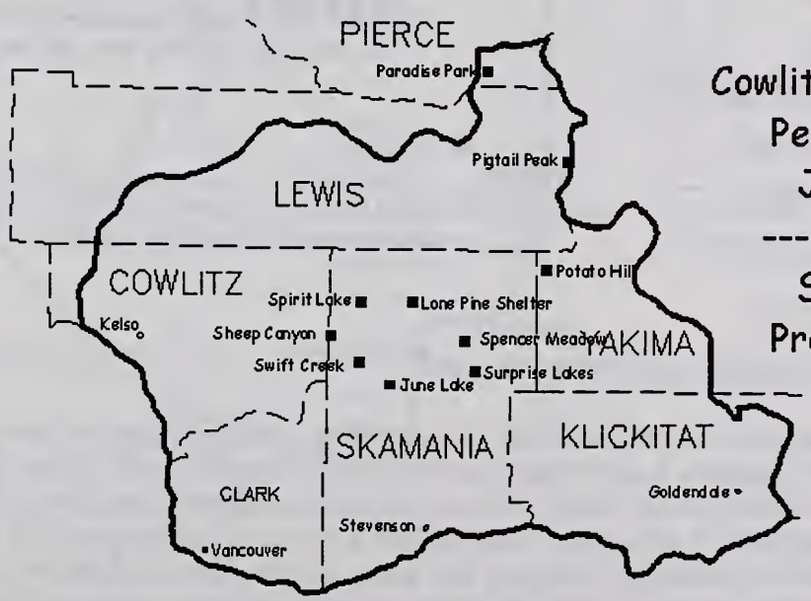
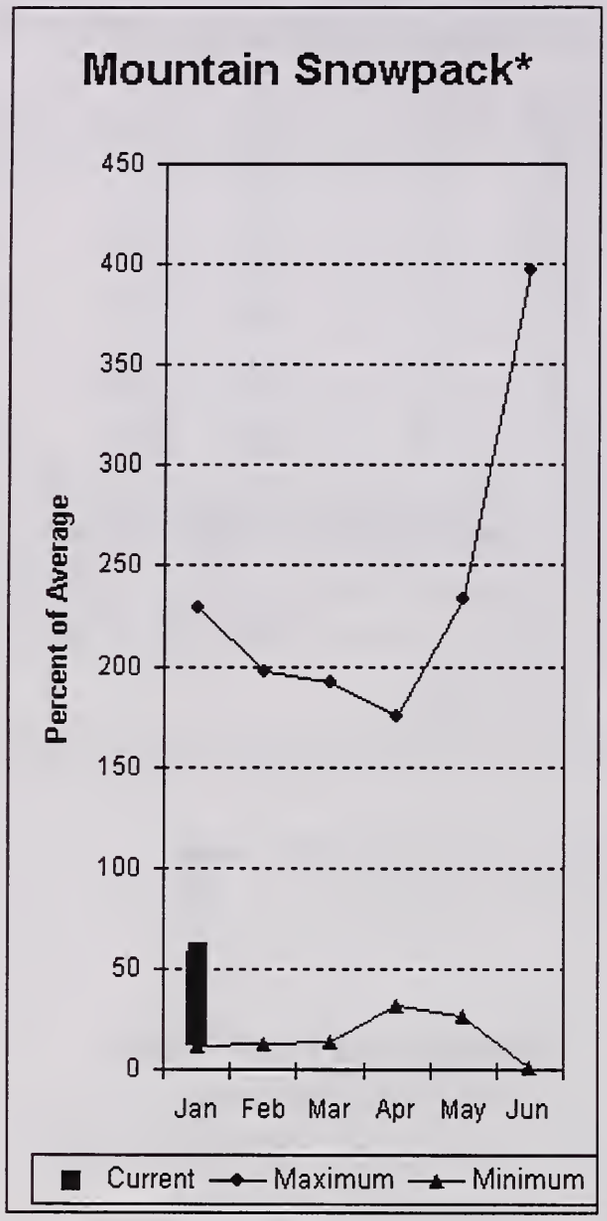
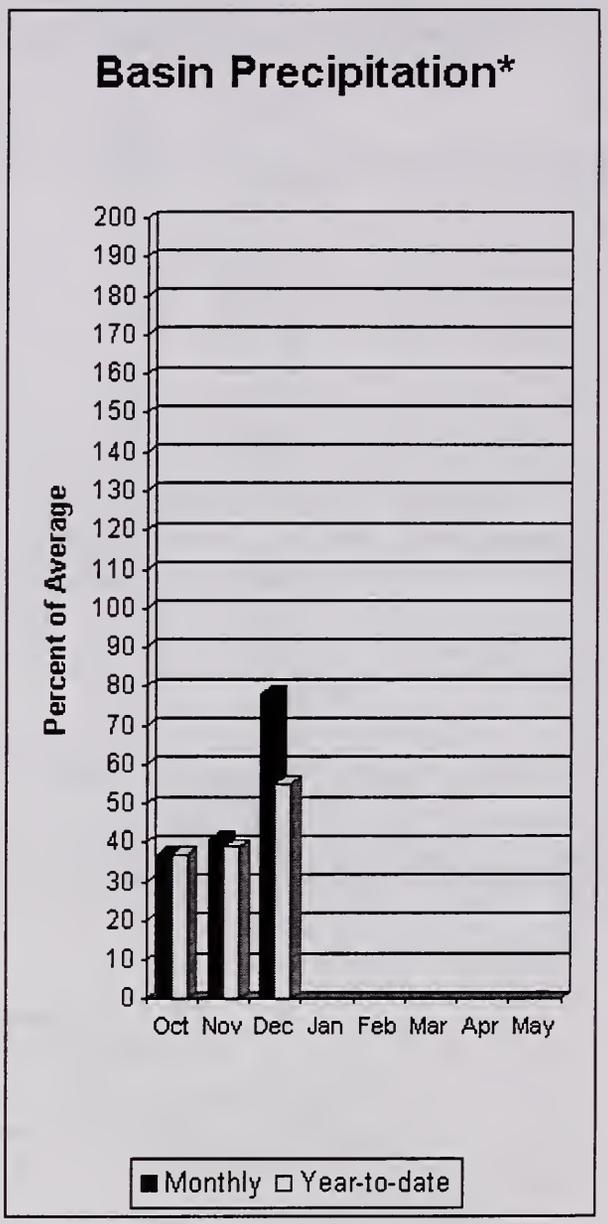


Cowlitz-Lewis River Basins
Percent of Average
January 1, 2003

Snowpack - 68%
Precipitation - 68%

White - Green River Basins





*Based on selected stations

Summer runoff is forecast to be 78% of normal for the Green River below Howard Hanson Dam and 82% for the White River near Buckley. January 1 snowpack was 63% of average in both White River and Puyallup River basins and 54% in Green River Basin. Water content on January 1 at Corral Pass SNOTEL, at an elevation of 6,000 feet, was 11.8 inches. This site has a January 1 average of 15.8 inches. December precipitation was 78% of average, bringing the water year-to-date to 55% of average for the basins. Average temperatures in the area were 5 degrees above normal last month and 2 degrees above for the water-year.

For more information contact your local Natural Resources Conservation Service office.

Streamflow Forecasts - January 1, 2003

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter ======>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
WHITE near Buckley (1,2)	APR-JUL	232	320	360	82	400	488	440
	APR-SEP	294	394	440	82	486	586	534
GREEN below Howard Hanson (1,2)	APR-JUL	107	171	200	82	229	293	243
	APR-SEP	118	181	210	78	239	302	268

WHITE - GREEN - PUYALLUP RIVER BASINS
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg

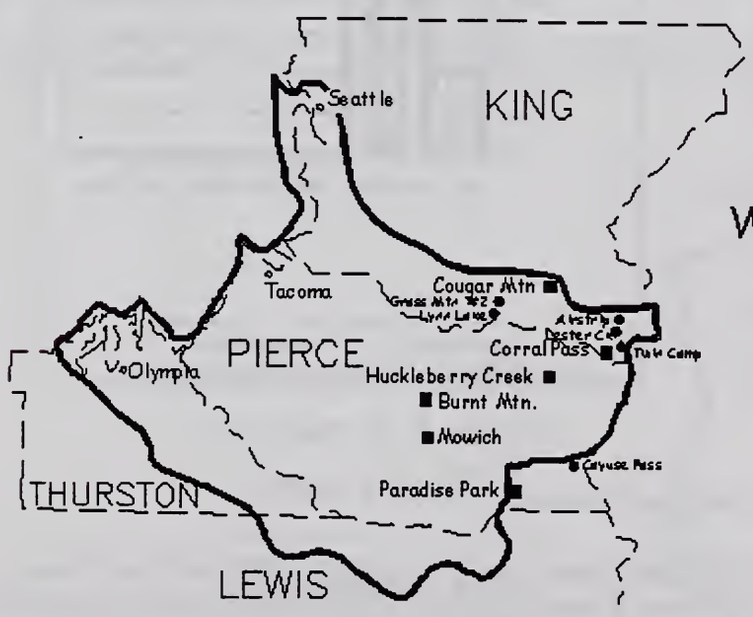
WHITE - GREEN - PUYALLUP RIVER BASINS
Watershed Snowpack Analysis - January 1, 2003

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
WHITE RIVER	3	53	63
GREEN RIVER	5	49	54
PUYALLUP RIVER	3	53	63

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

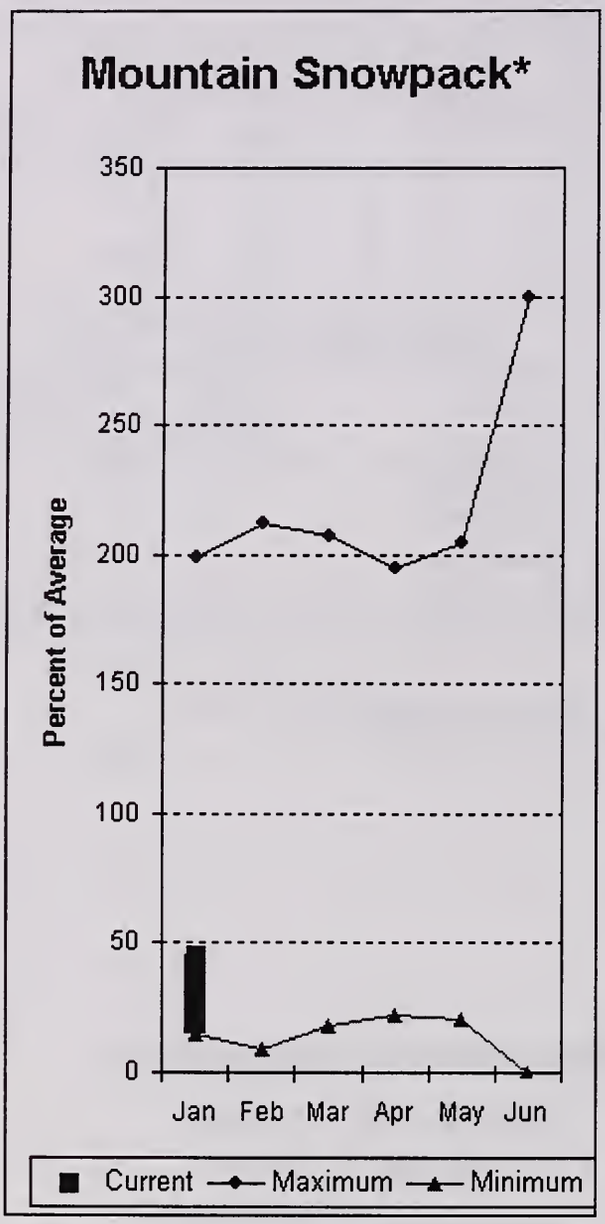
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

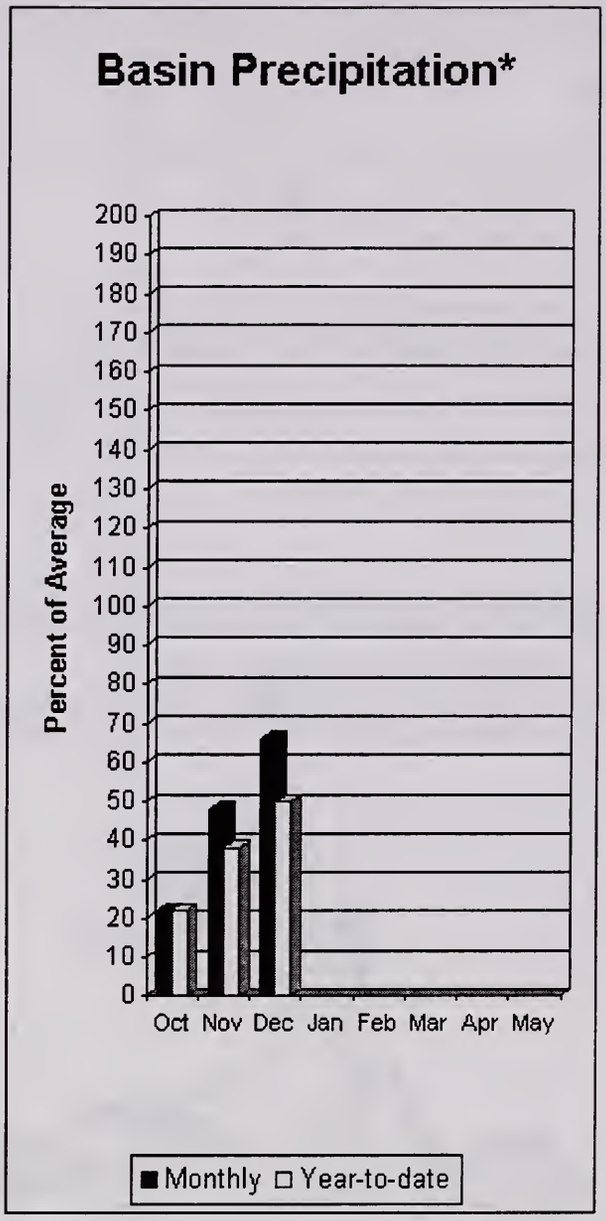


White-Green-Puyallup Basins
Percent of Average
January 1, 2003

Snowpack - 58%
Precipitation - 55%

Central Puget Sound River Basins





*Based on selected stations

Forecast for spring and summer flows are: 86% for Cedar River near Cedar Falls; 86% for Rex River; 85% for South Fork of the Tolt River; and 85% for Cedar River at Cedar Falls. Basin-wide precipitation for December was 66% of average, bringing water-year-to-date to 55% of average. January 1 average snow cover in Cedar River Basin was 50%, Tolt River Basin was 39%, Snoqualmie River Basin was 45%, and Skykomish River Basin was 46%. Olallie Meadows SNOTEL site at 3960 feet, had 11.3 inches of water content. Average January 1 water content is 22.2 inches at Olallie Meadows. December temperatures were 5-6 degrees above average for the past month and 2 degrees above normal for the water-year.

For more information contact your local Natural Resources Conservation Service office.

Streamflow Forecasts - January 1, 2003

Forecast Point	Forecast Period	<<Drier (90% (1000AF))	(70% (1000AF))	Future Conditions 50% (Most Probable) (1000AF)	(% AVG.)	Wetter>> (30% (1000AF))	(10% (1000AF))	30-Yr Avg. (1000AF)
CEDAR near Cedar Falls	APR-JUL	34	51	62	85	73	90	73
	APR-SEP	40	57	69	86	81	98	80
REX near Cedar Falls	APR-JUL	10.0	16.6	21	84	25	32	25
	APR-SEP	12.3	19.3	24	86	29	36	28
CEDAR RIVER at Cedar Falls	APR-JUL	18.3	45	63	85	81	108	74
	APR-SEP	14.3	43	62	85	81	110	73
SOUTH FORK TOLT near Index	APR-JUL	8.7	10.9	12.4	84	13.9	16.1	14.7
	APR-SEP	10.0	12.6	14.3	85	16.0	18.6	16.9

CENTRAL PUGET SOUND RIVER BASINS
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg

CENTRAL PUGET SOUND RIVER BASINS
Watershed Snowpack Analysis - January 1, 2003

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
CEDAR RIVER	4	37	50
TOLT RIVER	2	24	39
SNOQUALMIE RIVER	4	36	45
SKYKOMISH RIVER	3	40	46

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

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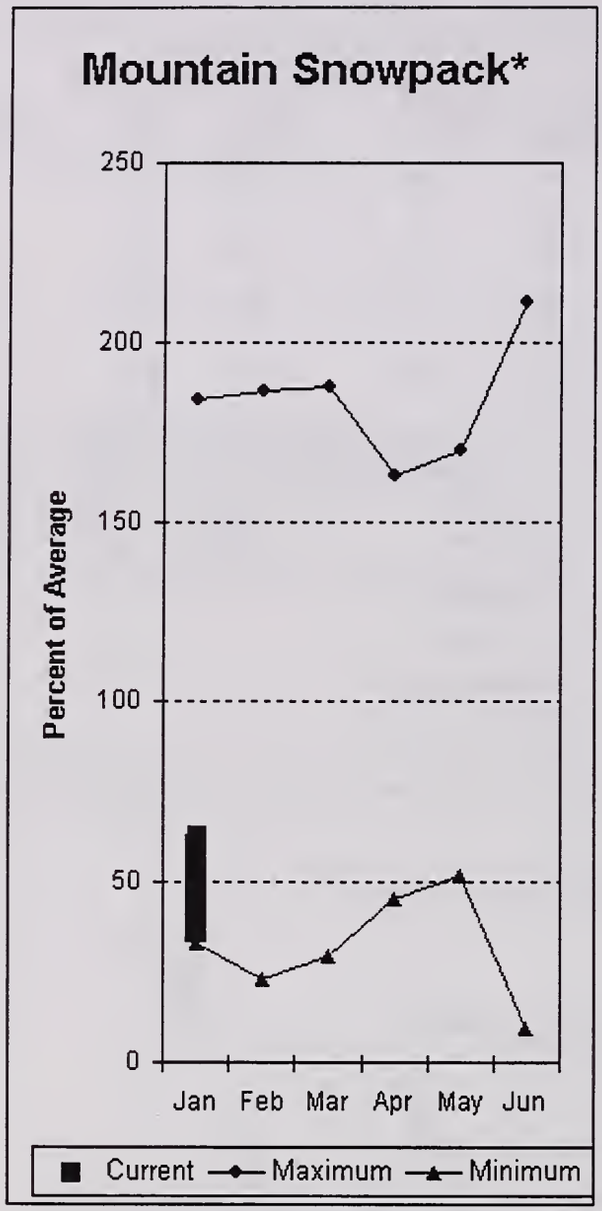
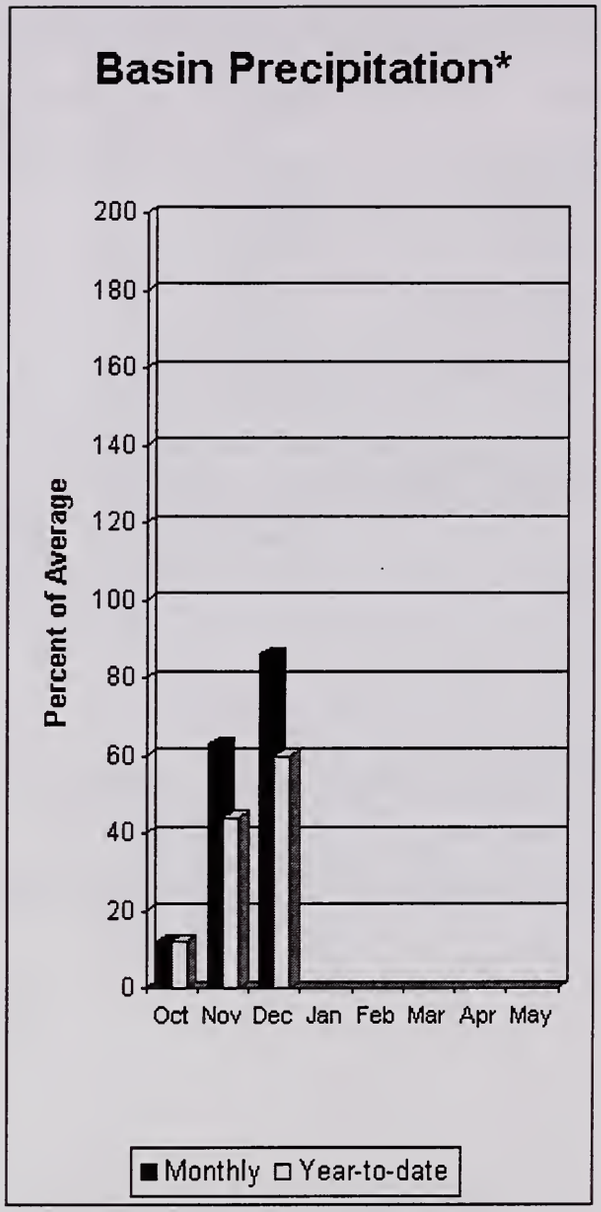
Central Puget Sound Basins
Percent of Average
January 1, 2003

Snowpack - 45%
Precipitation - 50%

North Puget Sound River Basins





*Based on selected stations

Forecast for Skagit River streamflow at Newhalem is 89% of average for the spring and summer period. December streamflow in Skagit River was 51% of average. Other forecast points included Baker River at 87% and Thunder Creek at 86% of average. Basin-wide precipitation for December was 86% of average, bringing water-year-to-date to 60% of average. January 1 average snow cover in Skagit River Basin was 54%, Baker River Basin was 57% and Nooksack River Basin was 78%. Rainy Pass SNOTEL, at 4,780 feet, had 10.5 inches of water content. Average January 1 water content is 19.9 inches at Rainy Pass. January 1 Skagit River reservoir storage was 102% of average and 83% of capacity. Average December temperatures were 5-6 degrees above normal for the basin and 2 degrees above average for the water year.

For more information contact your local Natural Resources Conservation Service office.

Streamflow Forecasts - January 1, 2003

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
THUNDER CREEK near Newhalem	APR-JUL	167	187	200	86	213	233	234
	APR-SEP	246	269	285	86	301	324	333
SKAGIT at Newhalem (2)	APR-JUL	1439	1571	1660	89	1749	1881	1864
	APR-SEP	1702	1861	1970	89	2079	2238	2217
BAKER RIVER near Concrete	APR-JUL	554	653	720	87	787	886	828
	APR-SEP	723	834	910	87	986	1097	1050

NORTH PUGET SOUND RIVER BASINS
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
ROSS	1404.1	1161.6	1125.8	1142.1
DIABLO RESERVOIR	90.6	85.3	85.6	85.3
GORGE RESERVOIR	9.8	7.5	7.3	7.9

NORTH PUGET SOUND RIVER BASINS
Watershed Snowpack Analysis - January 1, 2003

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
SKAGIT RIVER	3	46	54
BAKER RIVER	3	43	57
NOOKSACK RIVER	1	40	78

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

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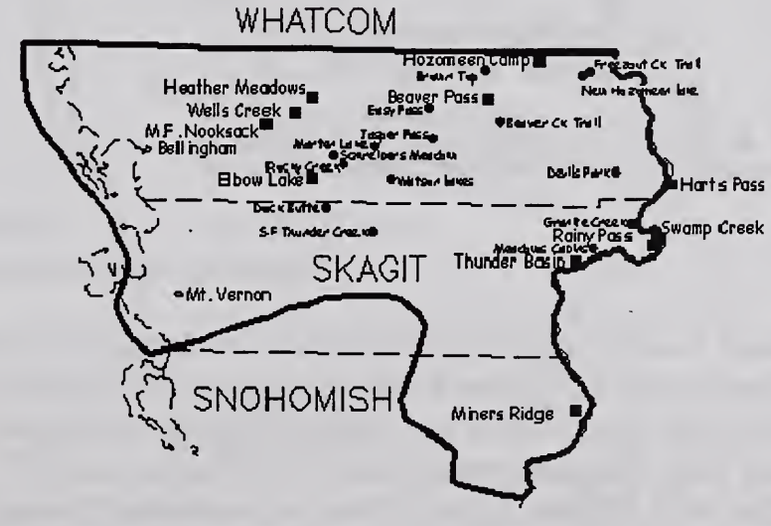
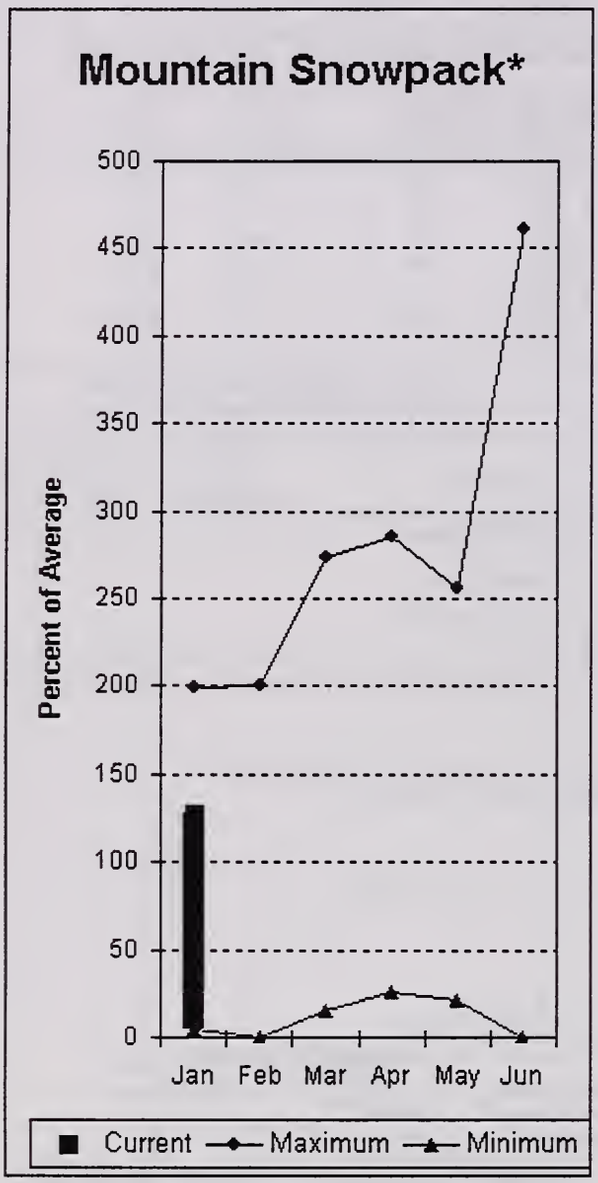
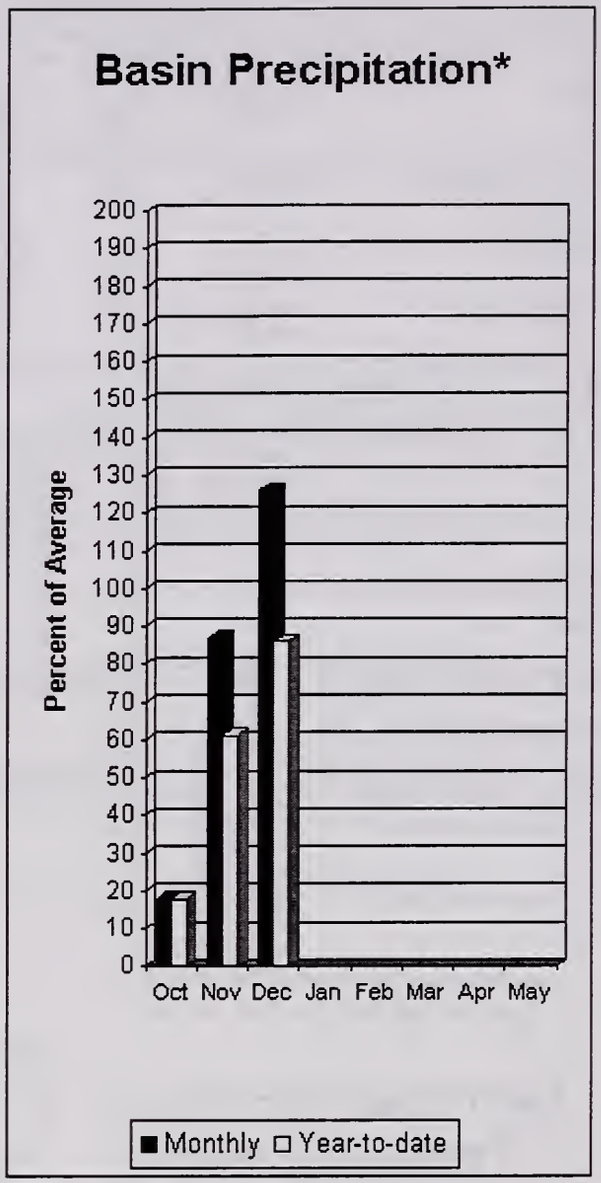
North Puget Sound Basins
Percent of Average
January 1, 2003

Snowpack - 63%
Precipitation - 60%
Reservoir Capacity - 102%



Olympic Peninsula River Basins





*Based on selected stations

Forecasted average runoff for streamflow in the Dungeness River and Elwha River basins is 100% and 96% respectively. Big Quilcene and Wynoochee rivers should expect near average runoff this summer also. December precipitation was 126% of average. Precipitation has accumulated at 86% of average for the water year. December precipitation at Quillayute was 14.7 inches. The thirty-year average for December is 14.5 inches. Olympic Peninsula snowpack averaged 127% of normal on January 1. Temperatures were 5 degrees above average for the month and 2 degrees above average for the water year.

For more information contact your local Natural Resources Conservation Service office.

Streamflow Forecasts - January 1, 2003

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	50% (Most Probable) (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
DUNGENESS near Sequim	APR-SEP	111	135	152	100	169	193	152
	APR-JUL	91	111	125	101	139	159	124
ELWHA near Port Angeles	APR-SEP	342	427	485	96	543	628	503
	APR-JUL	291	359	405	97	451	519	419

OLYMPIC PENINSULA RIVER BASINS
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg

OLYMPIC PENINSULA RIVER BASINS
Watershed Snowpack Analysis - January 1, 2003

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
OLYMPIC PENINSULA	0	86	0
ELWHA RIVER	0	0	0
MORSE CREEK	0	0	0
DUNGENESS RIVER	0	96	0
QUILCENE RIVER	0	82	127
WYNOOCHEE RIVER	0	0	0

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

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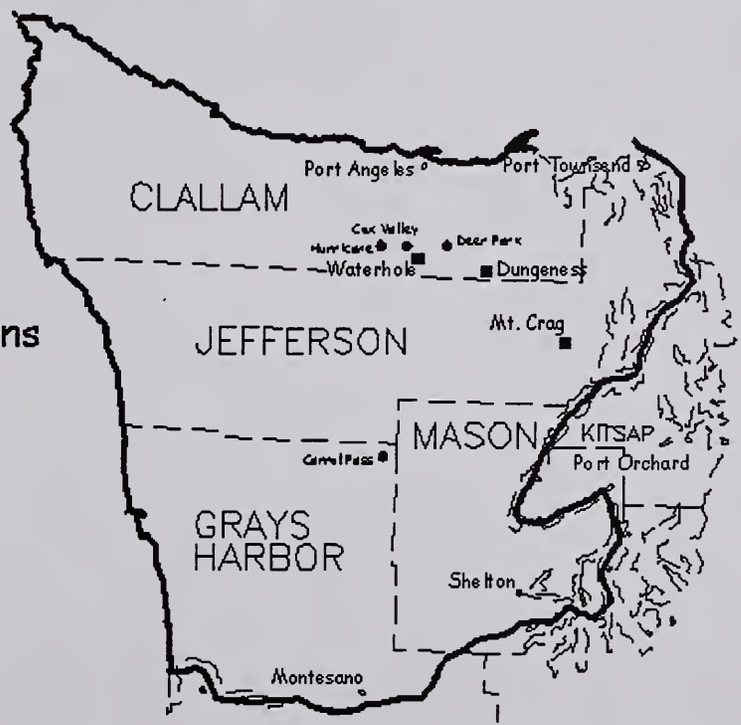
(2) - The value is natural volume - actual volume may be affected by upstream water management.

Olympic Peninsula River Basins
Percent of Average
January 1, 2003

Snowpack - 127%
Precipitation - 86%



Issued by

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State Conservationist
Natural Resources Conservation Service
Spokane, Washington

The Following Organizations Cooperate with the Natural Resources Conservation Service in Snow Survey Work*:

Canada

Ministry of Sustainable Resources
Snow Survey, River Forecast Centre, Victoria, British Columbia

State

Washington State Department of Ecology
Washington State Department of Natural Resources

Federal

Department of the Army
- Corps of Engineers

U.S. Department of Agriculture
- Forest Service

U.S. Department of Commerce
- NOAA, National Weather Service

U.S. Department of Interior
- Bonneville Power Administration
- Bureau of Reclamation
- Geological Survey
- National Park Service
- Bureau of Indian Affairs

Local

City of Tacoma
City of Seattle
Chelan County P.U.D.
Pacific Power and Light Company
Puget Sound Power and Light Company
Washington Water Power Company
Snohomish County P.U.D.
Colville Confederated Tribes
Spokane County
Yakama Indian Nation
Whatcom County
Pierce County

Private

Okanogan Irrigation District
Wenatchee Heights Irrigation District
Newman Lake Homeowners Association
Whitestone Reclamation District

*Other organizations and individuals furnish valuable information for the snow survey reports. Their cooperation is gratefully acknowledged.

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Washington Water Supply Outlook Report

Natural Resources Conservation Service
Spokane, WA